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No. 311

[Authors alone are responsible for the contents of their respective Papers.]

MILITARY EDUCATION.

*By Lieut.-Colonel F. N. MAUDE, p.s.c., late R.E.,
Commanding 1st Hampshire Royal Engineers (Volunteers).*

Monday, 9th November, 1903.

Mr. SPENSER WILKINSON in the Chair.

BEFORE approaching the main body of my subject, I wish to dissociate myself entirely from all the popular views as to the "Stupidity of the British Officer," his alleged idleness and want of interest in his profession, and to submit that the young British officer, once he feels his feet and is allowed to realise his responsibilities, compares very favourably indeed with his colleagues in civil life, or his comrades in every other Army with which I am acquainted.

To take the latter first, when the late war broke out, and the country was flooded with sensational accounts of our blunders and all-round imbecility, contributed by witnesses who revealed their bias and ignorance in almost every line of their work. I took great pains to draw up an analysis of blunders common to all armies at the outbreak of hostilities, and found, as I expected, that even without making allowances for the superiority of mobility on the part of the Boers, and the extreme difficulty of collecting reliable information from Kaffirs and colonists without military education, and whose loyalty was not always above suspicion, that comparing the numbers engaged and the area operated over, we came out exceedingly well from the test, and generally when the evidence forthcoming was duly analysed it appeared that at least nine-tenths of our misfortunes were primarily due to our want of mobility—a condition which our young officers could do very little to modify. Had we possessed the power of moving faster than the enemy, the want of information and consequent misfortune would have been on their side, not on ours.

As regards our civil colleagues or contemporaries, I wish to call attention to the following point. Army officers are drawn from

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As regards our civil colleagues or contemporaries, I wish to call attention to the following point. Army officers are drawn from

exactly the same families as our naval officers, barristers, engineers, doctors, and clergy, and each and all of these have to master, in order to survive in their profession, an amount of book knowledge incomparably greater and more intricate in character than is demanded from us. Look at the professional library of any member of these occupations, and compare the exertion of memory and intellect involved in acquiring a knowledge of such works with the effort necessary to commit to memory the half-dozen text-books which suffice for us.

Since it will not be maintained by any reasonable being that the mere acceptance of the King's commission in his land forces automatically stunts the intellect, it follows that if, and in as far as, we fail in the application of our lesser store of knowledge, there must be some essential difference in the conditions under which we and they have to bring it into practice. Once the extent of this difference is grasped the explanation is obvious. Broadly, they work under a uniform pressure of necessity and responsibility; we, under a constantly varying load, and under conditions which render the application of our simpler store of facts infinitely more difficult and trying to the mind.

If our judges had to sum up a difficult case and give a decision against time, under a heavy shrapnel fire, I doubt if litigants would be better satisfied—more especially if the judge only had a chance of practising his profession once in every five years, and then under a different code of law—and the same holds good of every other profession, a point our critics would do well to remember.

As long as human nature remains unaltered, men, and especially the healthy masculine mind, will never attain the same mastery of a subject which can be studied under theoretical conditions only, as it will of one in which daily practice under normal conditions is part of their every-day routine.

It must further be remembered that the war struck us still in a period of transition. Though short service had transformed the men, it had not yet worked its effect on a full generation of officers.

It is clearly obvious from the evidence given before the Royal Commission on the South African War that it was not in the junior ranks that men failed to accept responsibility; but rather it was amongst those who joined in the old long-service days, and who had not enjoyed opportunities of learning how to command when in the junior ranks that this deficiency was most manifest.

My efforts to defend my brother officers brought me much correspondence—from men who were in a position to know. These, whilst admitting that I might be right as to my own contemporaries, assured me that as regarded their successors, there had set in a regular "rot" in the product of the Public Schools, and in spite of increased competition in normal times, the standard of knowledge had sunk appallingly, and I heard much the same from men in other branches of life.

To settle the point to my own satisfaction I accepted an offer to work with one of the leading and most successful crammers, so as to see with my own eyes, and after three months I came away with the conclusion that my correspondents had been right, and that the rising generation of young officers as a body were leaving the Public Schools with less education than that of many of our rank and file.

I can state this with precision from the following experiment:—I set my pupils, Militia officers, all with South African service, several papers in elementary field fortification, the same that I had already used for the examination of lance-corporals in my Volunteer battalion, and found that though the young officers had had more tuition and time spent on them than the young sappers—the latter averaged more than double the marks.

Where the former were often quite incapable of giving a written description of work that they had done with their own hand, or even of finding and "*précising*" an answer from a well-indexed book, the latter wrote clear, intelligible replies which were worth over 90 per cent. of marks.

I may add that my former adjutant, who had been a Woolwich instructor, and another brother officer, who had held a similar position at Sandhurst, both fully concur with me in the superiority of the board school boy.

None of my Militia candidates were at all wanting in all other qualifications for command—on the contrary they will all make excellent leaders in the field; but as instructors they will be useless for several years to come.

The same applies to the Sandhurst and Woolwich candidates whom I have studied. Few, none in fact, who are at all likely ever to obtain a commission, are wanting in the moral qualities of an officer. They were all willing to learn, and easily interested in their work for a time, *but*, as a body, they were mentally incapable of "concentration" for more than a few minutes.

The main argument in favour of Greek and Latin as educational means, I have always understood to be, their difficulty. They could only be mastered by "concentration," and judging by the deeds of the men the public schools formerly turned out, it is evident that they fulfilled their purpose. Amongst my own contemporaries I cannot find evidence sufficient to establish any claim to superiority either for the "mathematical-scientific," or the "classical" training. But in the days when we were at school or Woolwich, we could at least give our minds to the work in hand, and taking Woolwich and Sandhurst candidates together, we left school with a far higher average of accurate knowledge than anything I have met with lately.

We, however, were about the last who served under the old *régime* of the "stick," and the habit of "concentration" was thoroughly well licked into most of us, even in preparatory schools.

In Germany there never was any "stick" in the classes, but the schools are almost entirely day schools, and since the parents fully appreciated the advantages of education and were firm believers in Solomon's old proverb, a note to take home was generally followed by the necessary result. Pulling a boy's ear nearly out by the roots and other ingenious modes of torture were by no means unknown to the masters, and sufficed to secure our undivided attention.

This, of course, does not help us with the board schools, but I suggest that in the lower classes the advantages of education are so much more clearly evident to children who, in big cities, have to keep all their wits alive that external pressure is not necessary to the same extent.

Now, I submit that "concentration," *i.e.*, the power of giving one's undivided attention to the work in hand whatever it may be, is the crux of the whole educational problem. It is the one faculty

which differentiates man from the monkey, and both races and individuals are successful in the struggle for existence—which covers both peace and war—precisely in proportion to its degree of development. We may call it by different names, according to the different fields in which it makes its appearance; but, whether known as discipline, staying power, endurance, the fact remains the same—the race or man that gives its or his whole undivided attention to the work in hand will triumph over the one that gives only a fraction of it. History teaches nothing if it does not teach this.

Now we cannot expect to bring back the "stick" any more than we can re-introduce "flogging" into the Army as an aid to "drill" which is a means to discipline; but I suggest that, just as the Army has long since found a satisfactory substitute for the "cat" the schools, if they will study the Army, can find an equally good one for the "cane."

I suggest that the Government should appoint a Committee of the highest specialists in nervous diseases, loss of control, and similar troubles, and get them to report on the "psychologic," not the "physiological" influence of "drill exercises" in restoring and developing "will-power" in the individual. We are all agreed as to the development of lungs and muscle such training affords, but the "will" training we entirely ignore, though that is by far the more important of the two, as every athlete nowadays thoroughly recognises.

Boys of the quick intelligence common enough nowadays are not wilfully inattentive, but their eyes and thoughts wander, their limbs twitch, because will power adequate to control brain and muscle has never been awakened in them. If this point were thoroughly gone into, and a sufficient system of physical training were universally introduced into *all*, not merely board schools, I feel confident that the results would astonish our teachers. Instead of wandering-eyed vacant-looking classes, they would have silent and attentive rows in front of them, and this silence and attention would act and react both on teachers and taught.

It is as impossible to teach a class incapable of attention as it is to really "drill" willing but undrilled men. I have found from experience the effect on one's own mind to be identical. After the first few minutes of willing attention are over, which is all either are capable of rendering, one feels one's-self fighting an impalpable cloud of suggestion, and after a short time teacher and taught mutually hypnotise one another. I wonder it has never occurred to anyone to inquire why officers even of marked intellectual ability sometimes fail so conspicuously in front of their men, even in peace time.

¹ I submit that nothing in our recent wars shows that in fighting we have lost our old determination. If the extraordinarily small losses which have sufficed to stop our widely-extended skirmishing lines be advanced as proof to the contrary, and I know that this has been widely done on the Continent, the reply is that men extended ten paces apart draw ten times the amount of fire upon themselves as when extended at one pace. More men, in the aggregate, would probably be hit at one pace, but no one man would feel himself so exposed to the enemy's attention at one pace as at ten. A man exposed to a fire making 2 per cent. of hits on a ten-pace extension is actually running the same chance of being hit as one in a single-rank line losing 20 per cent. in the same time, or a double line losing 40 per cent. That is the true basis of comparison.

In Germany the teachers start with a great advantage—they have themselves almost invariably been through the ranks, and the instinct of silence and attention is almost hereditary in the children. They have the object lesson in the troops in the garrison constantly before their eyes, and the idea of revolt never enters their heads. The contrast between their classes and ours strikes one in a moment, hence the thoroughness of their knowledge.

I have had considerable experience with German schoolboys and recruits, and I can most positively assert that whilst their book knowledge is above ours, their general quickness of apprehension and intelligence is as markedly below it, and since, where the experiment of training recruits by German methods has been tried, their progress has been decidedly more rapid, I submit that if we can bring the same mental atmosphere of "concentration" into our class-rooms, our educational progress will show equally favourable results.

This clears the ground for the second part of my subject. Having secured "concentration," what are we to teach?

The Committee on Education suggested "a good general education with a military bias." I suggest that the qualifying clause may well be omitted, for a good general education, of necessity, nowadays must include sound knowledge of elementary military principles.

The days of highly specialised standing armies, ready to go anywhere at a moment's notice—the dream of our amateur reformers—are past and done with; they could only exist in periods of chronic warfare, where the pressure and imminence of defeat made the taxpayer aware of his liabilities, and the sufferings of our troops in the Crimea show what must happen when, after a period of prolonged peaceful prosperity, the nation has lost touch with the Army. An Army is what the nation wills that it shall be, and under universal (or nearly universal) suffrage, the sole guarantee for efficiency is the degree of knowledge of the conditions of its activity possessed by every one of the electors. As a framework for disseminating this knowledge, I do not think our present organisation can be improved upon; but as yet it has been at work too short a time to overcome the mountain of prejudice heaped up in its path of progress. I allude, of course, to the value of the Volunteers and Militia as training schools for the Army, and as a medium for bridging over the gulf between the soldier and civilian.

As a nation, we have had no direct knowledge of war within our own frontiers, nor have we experienced what the yoke of a conqueror really implies. To read the debates in the House of Commons, and the leaders and magazine articles which have arisen out of them, one would imagine that Napoleon had never existed—for the views they mostly embody on fleets, armies, strategy, organisation, and tactics, are those of the Encyclopædists and the early days of the French Revolution.

There is not a "fad" on anyone of these subjects to which the last few years have given birth, which cannot be paralleled often in almost identical language in French, German, and English newspapers at the beginning of the last century. Skirmishers, mounted infantry, the uselessness of drill, and the prowess of a free peasantry fighting in defence of hearth and home: we have had them all; but whereas the intellect of other countries under pressure of defeat has left them far

behind and risen to higher conceptions of the soldier's status, and all that appertains to it, our leaders of public opinion can still speak and write of the burden of national expenditure as an incubus on trade and industry.

But where would English trade and industry have been had Napoleon once got command of the Channel?

Will our people never recognise that but for our insular position, which not only of itself attracted capital but enabled us to defend accumulations of capital more economically, *i.e.*, with less disturbance of existing trading facilities than other races, the means for the creation of the great industries which gave us command of the markets of the world could never have arisen?

Our financial function during the Revolutionary and Napoleonic wars was to act as an automatic accumulator of money power. Our obvious relative advantage of position attracted capital, which capital was in turn borrowed by the Government, and by them distributed as subsidies to Napoleon's enemies, and thence again it returned to us in payment for warlike stores purchased from us and other services rendered. It takes two to make a trade, and had not our subsidies kept alive foreign nations by the almost infinitesimal impulses which preserved them from extinction, there would have been no markets ready to receive our products, when the dam of the Berlin decrees was at length removed. Our nation grumbled then at taxation, as they always will; but without that taxation our sudden expansion in the Victorian era would have been inconceivable.

Signs are not wanting that we are approaching a similar crisis in our affairs. Would it not be well if our electors of all classes were prepared for what is ultimately inevitable?

For what must happen when the storm of war ultimately breaks over us?

Automatically, thanks to our marine insurance customs, there must be an enormous rise in the price of foodstuffs and raw materials, and concomitantly a fall in the value of all securities. Seven-tenths of our industries, however, depend on borrowed capital, and how many of these could keep running against a fall in the value of their securities of 30 per cent.?

The natural consequence must be the closing down of thousands of works, and the ejection of their workpeople on to the streets. Poor relief cannot be found for them, for there will be no one to pay the rates, and no one to buy if executions are put in.

To meet such an emergency we should have to raise a monster Army, even if no prospect of its services being required existed, for we must prevent bread riots somehow.

Fortunately, in the Volunteers and Militia we possess the requisite organisation to absorb as many of these men as necessary, provided this essential function of their existence is realised beforehand, and for one I have no doubt that unless panic gets the upper hand, our ultimate triumph is far more certain now than formerly; but panic is our danger, and every nerve should be strained to ensure that every voter in the nation knows and feels that individual self-control and endurance can alone save him from a far worse fate.

For what would happen if, yielding to panic, we surrendered to the enemy's terms?

A money indemnity and other impositions and sacrifices, which would tax all trade profits out of existence, and without these capital would go to new countries; but labour is not so easily displaced, nor is it readily welcomed even in our Colonies, as recent legislation in Australia shows. And where else are our displaced workmen to go? The fate of Ireland, under pressure of England's Free Trade policy, is there as a standing object lesson to warn us.

Briefly, our chief difficulty springs from the reluctance of our educational bodies to realise the position war occupies in the evolution of human progress. They still view war from the eighteenth century standpoint, as conditioned by the wickedness of statesmen and kings, and the soldier's "trade" as synonymous with butchery. This attitude of mind in freethinkers of the time was at least comprehensible; but how it has ever been possible for members of the Established or of any Church to justify this position passes beyond my imagination.

If a soldier's duty is "to kill," is it not also the whole end, aim, and object of all his training to teach him "to give his life—not for a friend" but for his countrymen, who too often have shown anything but a friend's interest in his survival?

The truth is that History, in so far as it discloses any law at all, shows everywhere and always the working of the law of the "survival of the fittest among the races," and proves it by a mass of detailed evidence immeasurably greater and more reliable than research has yet provided in support of the Darwinian doctrine, or any other accepted evolutionary law; and the only rational position that either science or the Church can take up with reference to the causation of war is that, like plague, pestilence, and famine, it is conditioned by "natural law," and its advent and consequences can only be averted by the same methods that we employ to control or minimise the other national scourges with which it is classified in the Litany, viz.: a study of its nature and laws, and a course of national hygiene.

The antagonism of nations is a natural force, having no foundation in reason, but present none the less, and it is this force which renders the peaceful trade intercourse of the nations an idle dream and speculation. Countries may welcome commercial products, but the individual resents the competition of the producer, and it is the sum of the interests of the producers that ultimately decides. When we have international trade without competition we shall be in sight of the golden age; but till that ideal is attained let us train every unit to appreciate that defeat for us means individual extinction.

Starting from this foundation, the erection of our superstructure is both natural and simple.

Primarily, we need the power to observe facts accurately, *i.e.*: scientific teaching; next, the knowledge of facts previously registered, *i.e.*: history; and thirdly, the power to reason accurately from given data, *i.e.*: mathematics.

Has not the time come when this latter subject can be presented to the student in a somewhat more interesting manner? Instead of making the pupil plod wearily through pages of examples profitable to nobody, can no one recast the books and make them a guide to the really interesting

facts of the Empire — of warfare and of science? A study which would co-ordinate and fix in the mind the facts learnt in the other subjects, and by repetition fix them in the memory.

Can we not also make far wider use of all methods of graphic solutions than we do, and thereby economise time to give to the higher branches? Very few of us can ever aspire to become expert mathematicians; still fewer ever require such skill in their daily work; but we would all be immeasurably clearer thinkers if we had been trained habitually to employ mathematical—not logical—methods of thought. Indeed, it seems to me that neither in tactics, strategy, nor politics can anything noteworthy be effected, except by the employment of the methods of the calculus.

They all deal ultimately with the summation of a number of infinitesimal variations which, though not susceptible of exact numerical presentation, may nevertheless be grouped within defined limits, which limits serve as guide posts to keep us in the right way.

In tactics I can vouch for it that the economy of labour this method affords is enormous; for it places one in a position to check the value of opinion, and thus strengthens one's own resolution against the inevitable opposition which action in any direction invariably entails. You learn to visualise your whole problem clearly, precisely, as an engineer constructing, say, a bridge sees his work before him; and when people crowd round you predicting disaster if their advice is not followed, you can afford to disregard it if it clashes with the accumulated results of human experience.

The current—almost eternal—dispute as to Free Trade *v.* Protection yields readily to similar treatment. Neither is absolutely good nor absolutely bad in itself; but both merge into one another by a curve the course of which can be fixed by proper scientific investigation. If this curve discloses sudden and abnormal variations, the presence of a disturbing cause can be predicated, and further research will reveal the cause of deviation, just as perturbations in the orbit of Saturn led to the discovery of the planet Uranus.

I am told that this method is already in use in France, and I gather also from the columns of the *Engineer* that it is recommended by Professor Perry.

Mechanics also should form an integral portion of the mathematical course, and should be taught experimentally at least from the earliest possible moment. In these days, when every boy possesses a bicycle, or has ridden one at least, it is ridiculous to postpone the investigation of such simple matters as levers and their action until he has mastered the binomial theorem as was the custom in my day.

But neither history nor science can be studied without a knowledge of modern languages—hence French and German.

History is unintelligible without geology, geography, and topography, hence these subjects should form integral parts of its teaching, and should not be shut off in water-tight compartments, whose long names only serve to frighten the youthful student. And since the successful conduct of war has always depended on a precise adjustment of the operations of armies to the resources of all kinds existing in the theatres of operations, a sound knowledge of warfare must of necessity embrace the whole evolutionary history of the races

concerned, and without such knowledge neither statesmanship, strategy, nor tactics, can be approached.¹

Incidentally, I would here point out the principal cause of the unsatisfactory condition of military study within the Army itself.

Contemporary writers always assume knowledge of the condition of the people, roads, resources of the country, etc., on the part of their readers. In subsequent years this knowledge is forgotten; hence the key to the real meaning of contemporary works is entirely lost, and the recital of operations alone conveys no real meaning to the average student.

The remedy lies in the hands of the Government for their annual demand under one head or the other, Civil Service, Army, Indian Police, Forests, etc., far exceeds that of any other single profession.

Let them settle a course of instruction, which can only be accomplished in the time available by concentration of purpose on the decisive factors, and which will require in every school a thoroughly modern equipment of educational means and appliances, and, to start the system, send their own experts round to advise and assist headmasters.

Presently the headmasters would find the advantage of employing qualified officers to assist them permanently as directors of military study. Older men of experience, who, without undertaking the hack-work of instruction, would impress on the boys, by occasional lectures and personal supervision, why knowledge is nowadays all-important in the Army, and what an officer's responsibility really entails.

This is practically impossible to the civilian, not because he does not know, but because the boys refuse to accept his evidence—an attitude they never dream of adopting towards the soldier, who speaks with the weight of an assured military status. On this point I have had ample experience. Boys and young officers whom I was told were incorrigible, dull, and ignorant, I have found both keen and anxious to learn the moment things were put to them in a practical form which they could understand.²

¹ By the allusion to "water-tight" compartments, I mean that the elementary geology, geography, and topography, together with the history of each country, should be taught with the language. Thus, instead of merely translating odd selections of prose, which may have been set in previous examinations, the selections should be systematically grouped in periods, and their bearing on the history, geography, etc., systematically explained by maps, pictures, lime-light slides, etc., anything which will enable the pupil to visualise what the text really means, and the condition of the country at the time referred to. He would then bring to the Study of Military History, when he arrives at that stage, sufficient general knowledge to appreciate the problems it presents in the form in which they are usually stated to him. What use is it attempting to study the lessons of the campaigns, in Hamley for instance, if the pupil has not the vaguest idea of the conditions, topographical, historical, etc., under which they were fought?

² I generally, after taking them for a "topographical" walk, and discoursing pleasantly by the way, questioned them afterwards on what they had seen and what I had said, and when I found, as I usually did, that they had noticed little and remembered nothing, I used to read them that immortal scene in Mark Twain's "Mississippi Pilot," describing the training of a "pilot's cub"; the result was always electrical.

Lastly, I would strongly urge the importance of securing for the Army a good supply of older University and Militia candidates, men who join the Service not only with a fuller sense of responsibility than one finds in the average schoolboy, but also with a far wider and surer basis of knowledge. Their presence will be of incalculable value in raising the intellectual status of the whole Army, always provided they make good use of the longer period for study this later entry affords; and on service, or even in peace, if promotion by selection proves more than a pious wish, their knowledge will soon enable them to outstrip their less well educated comrades.

I hardly like to give names in support of this theory, but Hodson, of Hodson's Horse, remains for all time the type of the leader we require.

From this point of view I consider that the much despised "back-door" into the Army gives us an advantage over other armies difficult to overrate.

Finally, when you have got your raw material, how do you propose to utilise it? I submit that our existing regulations give ample power and opportunity to work it up to the best advantage.

The order making company officers responsible for the efficiency of their units supplies the necessary incentive to individual effort, and the power to eliminate the idle and worthless needs only to be exercised to make itself felt.

Once it spreads through the schools that idleness is no longer the royal road to fortune, if indeed it ever was, the stimulus to work will soon be found sufficient. With three or four candidates for every vacancy, it will not matter if a few idlers are deterred from attempting the examinations. But once we have the men in the Army, let us, as in Germany, abolish competitive examinations, and judge our officers for promotion by the work done in front of their men.

Make the successful exercise of a company command the very surest road to staff employ and future advancement; for, little as I am personally inclined to underrate book knowledge, I do not hesitate to affirm that the *power of command* is of at least fivefold greater importance. Better a single fighting leader like Blücher, who could never explain on paper his own victories, than a dozen Weyreuthers, who wrote such elaborate orders that the enemy generally attacked and defeated him before he had finished dictating them (Austerlitz).

The CHAIRMAN (Mr. Spenser Wilkinson):—I should like to say that I think we might, for the purpose of discussion, specify a little further the title of Colonel Maude's lecture. "Military Education" is used in so very many senses that I think we may understand that what is meant by "military education" for the purposes of our discussion to-day is the education of officers, not the general military education of the public; and we must remember that Colonel Maude has treated of the education of officers under two branches—their general education and their specific military or professional instruction.

Major A. A. SOMERVILLE, Commandant 2nd Bucks (Eton College) V.R.C. (Master of the Army Class at Eton):—I am placed in rather a responsible position by being called upon to open the discussion on this paper, which is necessarily extremely interesting to one who, like myself, has been engaged for 22 years in preparing candidates for the Army,

during the last seven of which I have been head of the Army Class at Eton. Colonel Maude has been rather severe upon the public schools, so perhaps I may be allowed to say a word from their point of view. One of the phrases used by him is: "There has set in a regular 'rot' in the product of the public schools." We do not set the standard which boys have to attain in order to enter at Sandhurst or Woolwich; that is set by the Government and by the Civil Service Commission. I think that anyone who looks at the papers now set by the Civil Service Commission Examiners and the papers of ten or fifteen years ago will see that the standard has gone up considerably, and therefore the knowledge which is required by candidates is much greater than it used to be ten or fifteen years ago. As regards the success of public schools in passing candidates into the Army, it is a well-known fact that at the present time nearly 75 per cent. of the successful candidates for Woolwich are passed in direct from public schools. I do not know what the exact percentage is with regard to Sandhurst, but I know what our Eton figures are, and we certainly pass nearly 60 per cent. direct into Sandhurst. Mr. Rickards, who reminded me that this lecture was to be delivered, asked me for some figures with regard to Eton; he will speak presently, and will give you those figures, but I will just add to them that in the last examination we sent up eleven candidates for Sandhurst and passed seven, and we passed the sixth into Woolwich. You cannot ask very much more from the public schools than that—to pass 75 per cent. of the Woolwich candidates and 50 or 60 per cent. of the Sandhurst candidates direct from the schools. It seems to me that Colonel Maude has argued far too much from the residue—the candidates who pass in from the Militia. We know perfectly well that, as a rule—there are exceptions—candidates who pass in through the Militia are below the average, and you cannot argue from them. I take the average boy, and maintain that the public schools now, if you give them the average boy soon enough, will pass him direct into the Army. It is quite true, and it bears upon the point of concentration, that we labour under a special difficulty, and that difficulty, I hope, will be removed by an announcement that we saw in the *Times* this morning: the new Syllabus which is founded on the recommendations of the Military Committee, which have been adopted to a large extent by the Advisory Board. The difficulty we labour under is that we are expected to teach boys too many subjects, and the result is that it is very difficult to get thoroughness in any one of them. For instance, the Woolwich mathematical papers very nearly attained the standard of scholarship at the University. Boys had, till quite recently, to pass into Woolwich before the age of 18; but they could read for scholarships at the University up to the age of 19. These candidates for mathematical scholarships at the Universities had practically nothing to read at school except mathematics when they specialised in mathematics. But the unfortunate Woolwich candidate had to read practically ten subjects. He had to attain a certain standard in mathematics; he had also to attain a certain standard in French and Latin; and, it might be, in physics and chemistry as well; and then there were additional subjects, such as geography, geometrical drawing, and freehand drawing. I think, gentlemen, if those who criticise us so freely had to teach those ten subjects to Woolwich candidates, and saw these boys, as I see them day after day, working anything from eight to ten hours a day, and doing it willingly, they would say there were very considerable difficulties in the process. What we have been asking for for some time is that we should have fewer subjects, and that we should have a higher standard in each, and that, I hope, we shall obtain when you allow us to work at

the syllabus which was published in the *Times* this morning. But there is another great cause of deficiencies in our young officers. You say that the public schools do not teach them properly because these Militia candidates know little. You compare them, as Colonel Maude did, with his Volunteers. Now, those Volunteers are much older than public school boys, and they are a very intelligent class of men; and it is quite possible that his lance-corporals, who, after all, were the pick of the Volunteers, would do better than the refuse of the Army candidates. But let Colonel Maude compare the average Army candidate, the boy that we pass now direct into Sandhurst or Woolwich, with his average lance-corporal, and I do not think he will find there is a great deal of advantage on the side of the lance-corporal. He mentions in the lecture that the board school boy is far superior to the public school boy. That is not the opinion of our leading men of commerce. For instance, I attended not so very long ago, as the representative of Eton, a conference at the Guildhall on Technical Education, and one of the most interesting contributions to the debate was that of Mr. Albert Spicer, the head of one of our largest business firms. He said:—"We take into our business board school boys and public school boys. We find at first that the board school boy is more useful: he writes better, he runs errands better, and he is generally more useful in the office. But after a year or two, when the public school boy has got into the way of things, when he gets the chance, then we find out that he can think more, and is of far more use in taking charge of some important piece of business, as years go on, than the board school boy can be." Of course, there are exceptions on both sides; there are exceptional board school boys, and there are exceptional public school boys, but that is what he generally found to be the case. I was going on to say that what seems to me to be the chief cause of the deficiencies in our young officers is the fact that you do not instruct them adequately and develop their thinking powers when they get to the regiments. At Sandhurst and Woolwich you teach them pretty well. But at Sandhurst and Woolwich ten or fifteen years ago the instruction was not what it ought to be. At Sandhurst discipline was bad; they used to answer one another's names at lecture, and the amount of information they obtained was not great. At the present time the instruction at Sandhurst and Woolwich is greatly improved; but such subjects as modern languages and mathematics are not adequately taught. The classes are far too large. If you go to the public schools now you will find that the candidates for the Army are taught in small mathematical classes of six to twelve; the modern language classes are also small. At Woolwich and Sandhurst you find classes of thirty or thirty-five in these subjects. This means inefficiency. Then what happens after you send them from Sandhurst or Woolwich to their regiments? What systematic course of instruction have you in the regiments which not only looks after their smartness, their barrack-square drill, but develops their minds, and gives them a sense of responsibility? I venture to think that if you do get a few instances of boys being "fired out" for incapacity, instances such as Colonel Maude hopes for, it will have more effect in raising the standard of efficiency all through the Army than anything else you can do. What I hope to see is that there will be in the Army, as there is at present in the Navy, some system which will inculcate a proper sense of responsibility in the young officer. I think it is greatly to the credit of the young officer that, considering the temptations to idleness and the lack of opportunities for mental development in the regiment, he should do as well as he

does; and I have not heard that it was the young officers, the young public school boys, that did worst in the war in South Africa. In fact, as Colonel Maude has said, it was the regimental officers who did best, and the regimental officers, to a very large extent, are the product of the public schools. I will not weary you, but will sum up by saying that in my opinion the remedies for the defects of the young British officer are:—

1. To give the public schools a fair chance of working the syllabus that has now appeared, which has been put forward by the Advisory Board, and sanctioned by the Secretary of State for War, and by which we may obtain a higher standard and greater thoroughness in the subjects taught.
2. To improve and render adequate the instruction at Sandhurst and Woolwich; and
3. To improve and systematise the instruction of young officers in their regiments, so that mental power and a sense of responsibility may be developed.¹

I should like to make one remark with regard to Colonel Maude's syllabus. He says that the chief object of French and German is to study history and other subjects properly. I submit that Colonel Maude is not quite right there. There is another reason for teaching French and German, namely, that thereby you can teach boys to think. I may be a heretic, but within certain limits I believe that it does not matter what subjects you teach boys provided they are the means of teaching them to think. A boy's mind is not a receptacle for facts, but a delicate instrument to be prepared for its work in life. You cannot translate from one language into another without cultivating the critical faculty, and that means increasing the boy's mental power, and that is what you obtain in teaching a language.

Lieut.-Colonel A. W. A. POLLOCK (Reserve of Officers, Somersetshire Light Infantry):—It appears to me that the easiest way to get at the root of a subject, and the procedure to be applied in reference to it, is to first make up your mind exactly what it is you want. I take it that the whole object of military education is to produce leaders of men in various capacities, be they leaders of companies or be they leaders of armies. Generally speaking, I believe we may say that a man is more likely to become a good leader of an army if he has first been a good leader of a company, and in order to become a good leader of a company it is necessary that the officer shall have a reasonable amount of practice in commanding that company and training it. A great deal of paper has been wasted and a great deal of talk has been wasted upon the subject of military education from various points of view; but it appears to me that the whole root of the matter has generally been overlooked, which is this: That there is no use whatever in depending upon educating the officer out of books, or by examinations, or by anything else of that sort. There is only one way in which an officer can become proficient, and that is by practically training his men, and that training of his men he never does, not because he is unwilling to do it, not because he is not anxious to do it, but because he is *not allowed* to do it. I have been a soldier more or less for 27 years, and I have never, excepting in one year, known what it was to be allowed to train my own company, and that was at Devonport, I think, in the year 1894. My advantages

¹ In speaking of inadequate instruction in the regiment, I do not forget that a British regiment is one of the best possible training grounds for the development of the most honourable qualities of British character. I speak of insufficient instruction in the theory and practice of the military profession.—A.A.S.

there were considerable. In the first place, the general was a sensible man—that was a great deal—one does not always find it so. I had leave to go over a good deal of private land within reasonable distance of barracks, and I believe the result of that company training was satisfactory. But very few officers—probably not half-a-dozen in a year—enjoy similar opportunities. I was glad that at the beginning of his lecture Colonel Maude pointed out the iniquity of the general charge of “stupidity” that is brought against the British officer, and that he also drew attention to the fact that the British officer is the same sort of man as his brothers and his cousins who go into other professions. But the officer suffers from disadvantages, some of which he shares in common with those who go into other professions, but some of which are peculiar to his own. With all deference to Mr. Somerville, I do not agree that the public school gives the boy a good education, though in spite of all defects I think the public school boys are absolutely the best of those who enter the Army. What the public school chiefly fails to do is to teach the boy to express himself in English, so that people can understand what he is saying or what he is writing. Why? Because when the boy at school kicks up a row, does something that he should not do, or does not do something that he ought to do, he is told to write a thousand lines of this or five hundred lines of that. Why should not the master, instead of giving a useless task, order the boy to write a thousand words (or five hundred words) descriptive of yesterday’s cricket match, or give his opinion on whether so-and-so or so-and-so is the best “back” for the football team this year? To give his opinions about anything you please—it does not matter two-pence what. The boy should be taught to use his brains to try and find out something he does not know, and then put it on paper, so that people can understand what he means. For a short time, whilst I was a mobilised reserve officer, I was employed as temporary instructor at Sandhurst, and in looking over the cadets’ papers their “schemes,” and such like, what I found wasted my time more than anything was trying to find out what on earth a fellow was really driving at. At first sight it would distinctly appear to me that in his opinion a certain thing was black, but when I had gone carefully into the matter I often found that he meant exactly the contrary, and I had to give him full marks instead of none! This kind of thing pervades the whole show. Look at the letters that boys wrote home from the seat of war. I read one or two that were master-pieces—really first-rate; but we have all read others from which one does not get much “forrader” with the idea of what had happened. To get your leader of men, the first thing is to select who is to be the officer. That must necessarily depend upon some educational test, be it what it may. As Mr. Somerville has pointed out, when you teach languages or anything else, the chief object is to exercise the brain. Men have brains, muscle, and mind, and the more each is used the better it becomes. Take a man who can speak two languages, he can learn another language quicker than a man who has learned none. If we relied upon “nominating” suitable young gentlemen to be officers we could not prevent Tom thinking Dick, whom he knows, to be better than Harry, whom he does not know. You must therefore have examinations, and the test applied in those examinations must be upon ordinary education. The Duke of Wellington said that the proper education for an officer was the education of a gentleman. That absolutely applies; but I am afraid that the result of the education of a gentleman nowadays does not compare with the result of the education of a gentleman in the days of our grandfathers. Read the letters and diaries of officers who

served in the Peninsular War, and you will find intelligible descriptions of what happened. The language is pedantic, you may say, but that is only because it is a little strange to our slovenly modern ears. But at any rate, having read what is written, you have no difficulty in understanding what it was intended to tell you. Having got the selection accomplished somehow, we next come to the education of the officer after you have got him. For that, at present, there is no system whatever. Everybody busies himself in doing the work of those below him, and consequently never does his own; and I believe that fact is at the root of half the "regrettable incidents" that happened throughout that unhappy war in South Africa, during which so much was done of which we have reason to be ashamed. The whole secret of it was that nobody knew his job because nobody had ever done it. A man was supposed to be in command of a mixed force of 10,000 men, and yet he had never had an opportunity of intelligently commanding a company; he had always had someone to tell him exactly how to do it, and the somebody who had told him how to do it had nearly always told him wrong. There is one last thing I should like to repeat before I sit down, if I may trespass on your attention for one moment longer, and it is this: What you *must* do to make you leader of men is to give him a chance of training his squadron or company. At present he never gets that chance, and consequently fails to train himself. The tendency in recent years has been to concentrate our troops in large garrisons. For example, at Aldershot the garrison has been very largely increased, with what result? The training has become absolutely impossible. With the best intentions in the world, nobody, I do not care who he is, nobody commanding a company at Aldershot, can train it! It is impracticable. I do not care how much an officer has written about training, or been told about it, or read about it, he cannot train a company under Aldershot conditions. There are so many companies that during "field training" the training ground works out at only a few hundred yards per company—with trespassers, moreover, invading the plot. For a company to be properly trained the officer must decide what he is going to do to-day, and what he does to-day must be the preparation for what he is going to do to-morrow, and to-morrow for what he is going to do the day after. Therefore he must be the judge of whether he goes to a wood to-day or a valley to-morrow, or a plain the next day. Instead of enjoying this essential liberty, a company officer at Aldershot receives orders to go, say, to Stanford Common. It takes him two hours to march there, and he only has about 500 acres to train on when he has got there. It takes most of the day to get to the ground and to come back again, and there is often absolutely no work done throughout the whole proceedings. We should separate to train, and concentrate periodically for the manœuvres, when the generals can get their chance of using the finished article. We apparently imagine that generals can train troops. No man can *train* troops except in small units.

General Sir A. POWER PALMER, G.C.B., G.C.I.E. (late Commander-in-Chief in India):—I was quite unprepared to join in this discussion, but after the able paper which has been given us I must accept the Chairman's invitation. As late Commander-in-Chief in India, I was naturally very much interested in the subject of the education of our officers. Recent events have made it necessary to put into the Service a considerable number of officers, gallant fellows, colonials, who have done splendidly out at the war, but many of whom had not the ordinary education

of an English school boy. When I went my rounds of inspection, commanding officers were continually deploring to me the want of education of some of these lads. They said that not only could they not express themselves in English, but they could hardly spell. I naturally was very much startled at such incidents, and decided that if they had not been taught they must go to the regimental school, and work up to a first-class certificate if they could, as otherwise when their time came for promotion they would be stopped. With the assistance of the Government, who provided the funds, the number of garrison instructors was increased, and I trust that these young gentlemen are learning to cross their t's at all events. It is a very serious thing that we should have in the Army so many of this sort of officer. However, that is rather outside the mark of the paper. The question the lecturer has put forward is the want of preparedness for the duties of their profession of so many of the young men from public schools, who join the profession of arms. My own view is, after the practical experience of a very long service, that the subaltern officer, when it comes to the point, has never disappointed us. I believe in the subaltern. He generally comes straight from a public school, and has probably been captain of the eleven. He has had boys under him, and he knows how to order them about. The lecturer said that in his experience he has found Volunteer lance-sergeants able to express themselves better than these young gentlemen. This may be the case, but these young gentlemen, when they are tried, are not found wanting when the lance-sergeants turn to them and lean on them for instruction. Then again, as they go on in life, we come to the older officer; and the older officer, I think, is the one whose conduct has lately been most stigmatised by an irresponsible press. I have had the most melancholy communications from the officers out there, showing their disgust at the way they have been treated, and it strikes me that a good deal of the fault lay in our military system of making scapegoats. Sometimes a general officer, rather than acknowledge his mistake, looks round for a scapegoat, and I believe that many of the unpleasant incidents that have occurred in South Africa were because our senior officers were in such a dread of being Stellenbosched, that they often would not act on their own responsibility. There is a point in our Army system which I think wants attention. I attended the German manoeuvres some years ago, and was very much struck by some brigadiers of cavalry and others coming to grief. I was pleased to see that the much-vaunted German made exactly the same silly mistakes that we made at our camps of exercise. They blundered on to batteries without reconnoitring, and another man got his flank turned. I said to a German officer, "I suppose that this poor man's career is finished?" "No," he said, "he is learning; next year he will turn the flank of so-and-so, if he has the chance." But our camps, instead of being camps of instruction, are rather camps of examination, and the wretched officer who comes to grief finds his career stopped, when, if he only got more opportunities, and a chance of developing such knowledge as he acquired at the previous camp, he might eventually blossom into a Wellington or a Roberts. The subject of education has been threshed out by various speakers. It is contended that our officers, after they enter the Army, are not sufficiently instructed. If that is the case, perhaps the curriculum is worthy of alteration. We want English gentlemen who have a high idea of honour, and a good, sound, liberal education. But I think that it is after they join the Army that some steps are required to make them desirous of learning a little more about their work. Let them

realise the importance of it. A lad cannot realise it. How can a young fellow of 17 or 18, who has been knocking about, realise the importance of learning all about military history, topography, and everything else? But if you catch him younger, say at 16, and put him into the Army, after a year or so I think it very likely he will begin to realise the importance of learning a little more. He might get to know that it was useful to be able to do a little surveying, and read a map, and various other things that are useful, and then he should be given a chance. Mr. Brodrick, the other day, said, that after being gazetted, a man should be allowed to go for two years to one of the Universities. That, I think, would hardly work, but I do think that after a year or so there should be some system of military instruction available for officers who show a desire to learn a little more about their profession, and make themselves more useful than they will be if they go on as they are going on at present. And to do that, I think you must give some inducement. Our officers, I believe, are under-paid—I am sure they are under-paid for their expenses and everything else for which calls are made upon them. Therefore, give them some incentive in the way of so many shillings a day extra pay for passing a higher examination. They know that they have to pass a higher examination for promotion, but they say, "Promotion is a long way off: there is lots of time, I need not go up for my examination for some years." But if, after they have been in the Army a year or so, they see in front of them the means of making themselves a little more comfortable if they only pass this examination, they will begin to realise the advantage of having a few more dollars if they put their shoulders to the wheel. As to the stupidity of officers, we have heard of that *ad nauseam*. I will conclude by saying what a learned Judge said to me the other day: "They talk of the stupidity of officers: I can only say that I sold a horse to an officer the other day, and he was not stupid at all."

Lieut.-Colonel OTTLEY L. PERRY (2nd V.B. Loyal North Lancashire Regiment):—I feel rather diffident at making any remarks after the gentlemen who have recently addressed you. I cannot claim to have been in the Regular Service at all, and I speak as a Volunteer. The lecturer, himself a colonel of Engineer Volunteers, has made one or two remarks upon which, perhaps, you will allow me to comment. The lance-corporals he refers to could not fairly be compared to the average lance-corporals of Infantry Volunteer battalions. My own battalion happens to be in the North of England, and among the men there are a great many mechanics; and I have no doubt that in the case of Colonel Maude, the lance-corporals he referred to are also mechanics. You can hardly compare men whose livelihood depends on their proficiency in mechanical and engineering matters, with those to whom the subject is strange. I am very much obliged to him for his other remarks with reference to his general appreciation of Volunteers, but I could not quite understand his reference to the want of mental concentration or the want of power of attention on the part of the men while being trained. I remember very well a good many years ago General Sir W. G. Cameron came over, when he was commanding the whole of the North of England, to drill a brigade to which my battalion was at that time attached. He drilled us himself for three hours continuously, and at the end of that time he said he had never drilled any battalions that had responded more immediately and with greater energy and *élan* than those Volunteers did. They were Lancashire Volunteers, and I think it only fair to mention that fact. He was, in fact, one of those senior officers who

have devoted themselves entirely to their work. He was a keen officer, and that has, till lately, been rather a rare thing to find nowadays, especially amongst the senior ranks. During the whole period that he was in command, whether in the North of England or in the China command, or elsewhere, I have heard many officers say of him that he was keen throughout, and entirely devoted to his work. It is these keen chiefs, these general officers, who make keen subordinates. Military education comes to maturity or withers away after the young officer has joined his corps. The deciding factor, as somebody said just now, is regimental instruction. If general officers encourage battalion commanders to take a keen interest in the service efficiency of the junior officers who work under them, then those junior officers will respond, I am perfectly sure. They merely want the encouragement. Speaking of the Volunteer force, at any rate in past years, the keenness of its senior officers has been allowed to rust away, and many are now too old to learn. They have never had any inducement; they had nothing to look forward to; no amount of military education or efficiency could accelerate their promotion; and no amount of inefficiency (provided that the Public Finances were not affected) could retard their promotion or shorten their term of command. The result is that the tree is dead at the top, and you can expect very little from it under existing conditions. I would like to say one thing with reference to military education. The lecturer has confined his remarks to military education of the Regular officer. I would ask you, do not forget the education of the Auxiliary officer. In the old days, William of Wykeham founded New College, and he subsequently founded Winchester College, because he found it was necessary to have a preparatory school in order to fit men to go to his college. One of these days we shall again want a very large number of competent Auxiliary officers to supplement our Regular professional brethren, and we shall not have them unless we begin to train them now. I was delighted to hear somebody say just now that military training should be an essential part of every boy's school training. Mr. Somerville just now spoke of the special Army classes at Eton, and subsequently this question of Etonians—I may say that my brother was an Etonian—was discussed very much as though all boys at Eton had a military education, and as if all public school boys had a military training. At the public schools there are special military classes where a very limited number of boys, who wish to go in for the Service are trained, but what those particular boys do I do not think is any criterion of what the average public school boy who has not had the advantage of such special training, is capable of. When we speak of the fitness of the average public school boy for the commissioned ranks, we do not mean that boy, whose parents have arranged to train him for the Army at a public school. I do not think that the average public school boy—I speak as a Rugbians myself—has had sufficient attention devoted to him. I believe that if W. E. Forster, who, by the way, was himself a Colonel of Volunteers, and whose nephew and adopted son is now Secretary for War, had lived, he would have tried to extend some measure of inspection to the great public schools of England. I think the great public schools of England, all of them, want a great deal of overhauling, and it is a crying shame (but it is true) that the board school boy is overtaking the public school boy, and it is a fact that the board school master is a more highly-trained teacher than the public school master. I am speaking of the average master in both cases. The public school master is not as a rule trained to teach at all. He gets his position because he has taken a good degree, and because he is a gentleman, or because he is a good man

at games, which tend to make a good leader; but he is not appointed as a rule because he is a good and trained teacher, and that is one of the reasons why the average public school boy also in his turn fails to be a good instructor, and why his natural intelligence remains undeveloped, and why people are able to throw mud at the average schoolboy who comes from a public school. I yield to nobody in my admiration of the public schools of England; they are (I had almost said—were) great institutions; but they have been grossly neglected by our Parliaments. Certain speakers have told us that the average Army officer does not get a good regimental training, and when war is upon us his further training costs the lives of many comrades; I say the average public school boy finds the world a difficult place to graduate in, because he has been badly equipped for the battle of life, owing to no real fault of his own. Considering the enormous sums that are paid by parents for boys when they go to public schools, I think the return is a very bad one. An officer just now spoke of the inefficiency of officers resulting from a want of room to exercise their men in. It affects everybody. Take Wimbledon Common, where many London Volunteer regiments have to drill. I have been there with the Queen's Westminsters, with half-a-dozen other regiments scattered all over the place; one regiment masks or runs into the other. What possible chance is there of having any intelligent system of drill on a place of that kind? The whole thing is a farce, and its experiences most misleading. Much time is spent in getting there and in getting back. Then men who go there have to pay for going there out of their own pockets, and they have to pay to come away out of their own pockets. The horse hire for the mounted officers is enormous, and the work that is done there, I will not say it is useless, but it is almost useless and often mischievous. It is, I think, for the Government to do now what they used to do in the old days of archery, when they provided free butts. I think that the Government should, at any cost, provide large open spaces which can be used by troops of all arms, whether Regulars or Auxiliaries. There should be such spaces definitely allotted to them in London. At present, even where suitable open spaces exist, access is often denied to them. You must not drill in this park, the ranger will not allow it; you must not go into that park for some other reason. I maintain that this question of adequate room to handle troops in is vital to any really intelligent training that we wish to give to our officers or men, and their efficiency is vital to the safety of this nation, and to all that it holds dear.

Major A. G. RICKARDS (late London Rifle Brigade):—When I came here I did not know that Mr. Somerville, the head of the Army Class at Eton, would be able to attend, but, as an old public school boy, an old Etonian, and a Volunteer officer, I wish to give a few figures to show the efficiency and efficacy of the Army Classes, at any rate at Eton, in sending up candidates for commissions in the Army. Mr. Somerville has already covered all the general ground in the defence of the public school system of education for officers, and Sir Power Palmer, who is a very high authority, has said all that is necessary in their defence as officers in the field. Therefore I will only ask your attention for a few minutes while I give you the figures relating to the Army Classes at Eton for the last few years, which I think may be taken as a fair sample of the success of the Army Classes at the public schools in preparing candidates for commissions. These figures are, very shortly, as follows:—The average number of boys in the Army Class at Eton is 105. Some of these do not go up for direct commissions; they

enter the Army through a University, and some through the Militia. A few are not serious candidates, that is to say they are never really meant for the Army, but they go into the class in order to get education on the modern side of the school. The following are the figures for the Army Class at Eton with regard to Woolwich and Sandhurst from July, 1897, to December 1899, inclusive. I omit 1900 and 1901 as very special years on account of the South African War, and take up the numbers again in 1902:—From July, 1897, to December, 1899, inclusive, the number of candidates who went up direct from Eton for Woolwich was 26, of whom 22 were successful. From July, 1897, to December, 1899—the same period—the number of Sandhurst candidates was 66, of whom 44 were successful. From July to December, 1902, there went up direct from Eton, 12 candidates for Woolwich, of whom 3 were successful. I think I ought to say here that the number of admissions into Woolwich for the last two examinations has only been 35 at each half-yearly examination, instead of the usual 50. In that same period of 1902, from July to December, the number of Sandhurst candidates was 19, of whom 17 were successful. In some cases the boys went up more than once, but the successes, of course, are only counted once. I think those figures show an extremely good result of the Army Class at Eton. I believe, and I think I am justified in saying, it is a good education, that the standard of training is a very high one, but I do not suppose the standard of intelligence amongst the boys is any higher than it is in any of the other public schools. Many other public schools also have excellent classes, and the results from those classes are, I believe, very good. Again, I think the lecturer should bear in mind, as Mr. Somerville has said, that the boys who go to the crammers—I wish to say nothing depreciatory of them—are not intellectually up to the average, and the crammers have, therefore, not such good material to deal with as the boys who are successful in going up direct from the public schools, and necessarily do not form a very high idea of them.

T. MILLER MAGUIRE, M.A., LL.D. (Barrister-at-Law):—To me the subject matter of this discussion seems to be of transcendent importance—of national and imperial as well as of scholastic importance—far more important than the jargon and the shibboleths of the paltry fiscal puerilities of the hour. I am not going to follow my excellent friend Mr. Somerville, as to the rival merits and successes of certain schools, when under our system all are bad, and good lecturers like himself and able examiners can scarcely be found. The capacity for their duties of the class of the community on whom our national existence depends is a vital matter. This is my topic: That our officers should be efficient concerns us all. To me it has always been a matter of supreme indifference whether the person who was to lead my fellow countrymen or myself (when I was on the active list) into the jaws of death, or save their lives and honour in a fateful moment, or who undertook to supply them with provisions and ammunition as against regular, savage, or guerrilla foes—I say I never cared whether such a man gained his general intelligence and cultivated his common-sense in a board school, a Militia regiment, a day school, or some great rich caravansary of a public school, or whether he came from the banks of the Thames, the Clyde, the St. Lawrence, or the Shannon. Is he fit to lead? If so, let him lead. If he is not fit to lead a section, a company, or a brigade, then the sooner he ceases to pretend to lead the better for the country and for himself. Why should he drivel along to capture or starvation or death? We have muddlers enough in the Cabinet; we don't want

them in the Army. We have hundreds of ignorant and incompetent men in Parliament and on public platforms. Let half-educated or ignorant rich men prey on the nation as civilians, they are no use as colonels; but if a man be competent and rich, so much the better. If he cultivates his brains and spends his money for the public benefit, let him be admired—he is of high excellence. Colonel Maude tells us that “board school boys are far more efficient,” have better powers of concentration than the average public school men. I take it he does not mean the men who elect to join special classes for purposes of vigorous study in public schools or private academies, and who defeat hundreds of their compeers at tests of knowledge and industry. Colonel Maude means the average “muddler,” and not the “salt of the earth.” I say the fashionable public schools, and their ignoble worship of gold, and their snobbery are the curses of the upper and middle classes of England, and I believe that these huge hives of dulness, of holiday making, game playing, and worse, must be amended or ended forthwith if the upper and middle classes of England are not to go deteriorating into utter degeneracy. The average product of the public school is no use at all in any walk of life, and I say that if there were an efficient system of inspecting and reporting on these schools that the people at large would be more astonished than they were at the War Commission Report. To give the public school “heads,” who are the most incompetent educational authorities of their position and means, the power of granting leaving certificates, entitling their pupils to supersede able Scotch and Irish grammar school boys, and, as Colonel Maude says, board school boys, for public posts, will be an outrage on the nation. Of course, if the average public school masters were obliged, in return for his expenditure of some £600 or £800, to enable each boy to pass a minimum test of efficiency at the age of 17, under honest neutral control and thorough inspection, as in Germany, it would be another matter. I am quite clear that the average son of an English squire or merchant is in a state of intellectual darkness that cannot be found among the sons of Presbyterian ministers in Scotland, or among the sons of Irish drapers and publicans, and cannot be found anywhere in Germany, and that this is the fault of his degenerate parents and worthless teachers. There is no such ignorant person of the middle class in any civilised State as two-thirds of the young men aged 17 in the richer English schools. The day schools are infinitely better. Big boarding schools are fatal mistakes socially, intellectually, morally, and they must not be favoured at the expense of day schools or private schools. Indeed, I believe that they are very likely to be closed before ten years, amidst the execrations of the very parents who are now sending their boys to some of them for merely social reasons. In Napoleon's time the moral was to the physical as three to one. Nowadays the mental is to the physical as twenty to one. Intelligence, ratiocination, trained memory, power of expression in composing and quickness in comprehending orders! Behold the very foundations of the success of leaders of modern armies who ought to have the best brains in the nation, as their responsibilities are enormous. We want skilled captains of industry, and as many candidates must fail at public competitions, we want the sons of merchants, squires, parsons, and even Marquises and Dukes, if they must be in Cabinets, to be men of capacity and culture. Are they? Yes, if they are Scotchmen, Germans, Yankees, or Jews, or Irish; most assuredly not, if they go and waste four years in English fashionable schools. Our people must be very well educated in the general foundations of culture, and afterwards in technical details, if we are to hold our own. I don't lay much stress

on programmes. Teach our boys well any four subjects, in addition to the ordinary board school subjects, and I am content. I say Lords Wolseley and Roberts and Sir William Butler, as well as all the leading merchant princes, and every authority on the European Continent and America, agree with Colonel Maude, and, I may venture to say, with myself. All soldiers and military professors complain of the scandalous ignorance of history and geography among public school boys, and hence among many Army officers. I assert on the authority of the late Lord Salisbury and Lord Morley that English literature and history were omitted from the curriculum for Army entrance because these subjects were better taught by private teachers and grammar schools than at the public schools, and as the ridiculous persons called "heads" would not change their systems, the Army entrance systems were changed to please them. English literature led to cramming! Shades of Spenser, Bacon, Shakespeare, Milton, Napier, Macaulay, Burke, Pope, and Byron! all crammers! I suppose, who must not come between clerical heads and the wind of their ignoble conspiracies of ignorance! Yet Lord Roberts regularly complains of the way officers are hampered by their ignorance of English. Now, for my part, I think that two men like Lord Roberts and Sir Power Palmer, who has just spoken, are worth all the heads of Eton, since the days of that eccentric who gained fame for his prowess with the bitch. Sir Power Palmer, and in bowing to him I salute one of the chiefs of an army of rare prowess, ennobled by high enterprise amidst the burning tropics and the eternal snows—by the banks of the Jumna, and by the throne of Solomon, and recently even more famous among the embattled legions of so many races, when the Indian Army, dusky and white, immortalised itself again even by comparison with the champions of young America and of old Japan. Sir Power Palmer says that the average public school boys won't do for the Indian Army. Why should they? The officers of the Indian Army have been the flower of the military profession, a credit to their nation, a credit to the whole human race, showing how well we can, outside the caravanseries of ignorance, develop chivalry, intelligence, and far-seeing wisdom, as well as that *mens aqua in arduis*, which distinguishes in battle the kings of men. The officers of the Indian Army, as well as Indian Civil Service men, whether under the old company or the Crown, have been throughout altogether too good for the charlatans of the Home Government, who have so often ignored and betrayed them. Parents during the recent war, golf-playing, ignoble, bridge-playing, selfish parents, rushed to the War Office to accept commissions in the Army for youths who could scarcely read or write; why, because of the utter indifference to and hatred of learning among the so-called upper classes from public schools. I know this because parents wrote to me saying that they would pay no more fees to get their sons taught—fees of some £30 for the elements of knowledge of common English, as well as military art—they would not pay any more, these fashionable females, lower, really, in soul than Scotch hucksters. Why? Because commissions in the British Army were being distributed for nothing to 600 poor brave ignorant lads; also, bad as they were, too good for a Cabinet of muddlers to slaughter in South Africa. Some of these reached India, some of them only got as far as Aldershot. Sir Power Palmer refers to official reports. I will read the orders, both from Simla and Aldershot. Sir Power Palmer knows them, and so, sir, do you, I fancy:—"Headquarters of the Indian Army, Simla.—May, 1902." Perhaps Sir Power Palmer will wonder how I got hold of this, but here it is:—"Every individual accepting the King's commission

must do so knowing what the commission entails"—apparently his school-master did not know what the commission entailed. Apparently his bridge-playing mother did not know what the commission entailed—"and have some idea of the standard of elementary education that is required to understand even the various subjects of military everyday life." For the sake of saving half the price of a ball dress, the ignorant parent of that heroic boy took him from all sources of education and sent him to lead native as well as European soldiers fourteen thousand miles across the sea. "He ought to have *some* idea of the standard of elementary education that may be required to understand the rudiments of ordinary military life"—not a very high ideal, Sir—"in order to avoid the waste of time." Here is the beauty of the thing; here is the efficiency of the Indian Army. I prayed for my old pupil, General Smith-Dorrien, after I read this phrase:—"In order to avoid the waste of time that would be incurred were officers without sufficient elementary education sent to garrison classes, an examination will be held on the first Monday of December, in arithmetic, mensuration, geometry, geography, English history." And these young officers must learn that they are fit for nothing else at present except manual labour, and therefore they go and pay six rupees a week to learn these matters, which they lack through the fault of their economical parent:—to learn the elements of education from non-commissioned officers and young subordinates.

General Sir POWER PALMER:—Those were the young men whom I spoke of just now who had come into the Service from the Colonies without any military preparation whatever, not the gentlemen from public schools.

Dr. MILLER MAGUIRE:—I say they were not Colonials; they were, as a rule, from public schools. I had myself refused to teach many of them on the ground that they were too ignorant to pass. There were six or seven hundred of these gentlemen, not all from the Colonies, I am sorry to say, but a very considerable number of them from London—a very considerable number of them in the Artillery, a very considerable number of them paid high fees to public schools, a very considerable number of them (as Sir William Butler put in his Orders) who were gentlemen on whose schooling £800 a year had been paid for no education. I quote Sir William Butler's Orders on the same subject:—"Headquarters Office, Aldershot, 24th October, 1900. I wish to draw attention to the fact that the writing and spelling of many of the junior officers of Militia are very indifferent. As many of these officers have joined the Militia with the view of obtaining commissions in the Regular Army, I hope you will consider it worth while bringing this fact to the notice of the headmasters of public schools, as, considering the amount the parents pay for their education, the result is not at all satisfactory." Now, were they Colonials? The Colonials are, on the average, far better educated than the average product of the three most fashionable English—I confine this section of my remarks to English—not British, public schools. I hope Sir Power won't have me prosecuted for making public these official documents, but I would risk heavy loss of the little I have left owing to our Cabinet of "muddlers" if I could benefit that splendid material, the youth of our Empire, especially our soldiers, for whom I have had a feverish fellow-feeling from my earliest youth. They are all, from private to general, to me even as the apple of my eye. I say, then, that if we do not in all our spheres devote ourselves to this business of education,

so that an average Englishman of a certain age and of a certain rank will be as fitting for his military education or for any advanced business as the average gentleman of his age among our possible adversaries on the Continent of Europe, something dangerous will happen to this nation, and that before long. I thank Colonel Maude for his lecture. I say that no fantastic frivolities on platforms, statesmen calling one another fools and asses because they do not change all their opinions at a moment's notice; I say no amount of bombast will save the nation. It is a disgrace to this great nation that, having regard to the vast expanse of the territory of the Crown protected by our soldiers, such a paltry sum is devoted to educating the officer, whether the Volunteer or Regular or Militia officer, as is now spent. You know perfectly well that all the money spent on engaging good instructors and teachers in England for the forces of the Crown is a mere drop in the ocean of our national expenditure. Why is that? Because the richer classes of English people want to avoid, if they possibly can, troubling their children with knowledge, whether they are officers or are anything else. It has been distinctly laid down—it has been said at the British Association, it is said at every meeting—that as compared with other races, we are at present two generations behind them. And that, I am sorry to say, Sir, applies more to the English branch of our Imperial race than to the other branches. I know the Scotchman does the very best he can to get a sound education for his son; and although I am here belonging to the smallest of the three great portions of the United Kingdom, I am proud to say that there is no son of a shop-keeper of two or three hundred a year in Galway or Cork or Belfast who would be satisfied for one moment with the intellectual condition of his son if, at the age of eighteen, he was only instructed to the same extent as the average young gentlemen, not the selected young gentleman that gets into the Army, but the average young gentlemen who are now at this moment pupils in the six or seven leading public schools in England. I put it to you frankly, that this great question we are discussing is a question of the most vital importance. Without in the slightest detracting from the physical and moral vigour of our officers, without detracting from their splendid courage and magnificent endurance, there should be within five years under this new system of education published to-day, or under any system of education administered by enthusiasts, if the parents of the people are as proud of the doings of their sons as their fathers were, a great improvement. The material for the British Army, to my certain knowledge, knowing well the British soldier as having been a non-commissioned officer, an instructor, and an officer, and knowing well foreign soldiers also, will compare with any other material. By some singular degeneracy the English people, probably due to the anachronisms called colleges, and to the contemptible positions and rewards of teachers, the English branch of our nation, is so debilitated mentally that if it does not forthwith bestir itself—whatever it may do as to the fiscal frenzy—and put its educational house in order, disasters will happen, not only among its soldiers, but also among its merchants and to its Empire.

Lieut.-Colonel F. N. MAUDE, in reply, said:—I rather think that several of the speakers have wandered from the point I have endeavoured to convey. I was not discussing the training of the officers after we had got them. I said that then we had power enough to deal with them. It was mainly a question of the preparation for the position of an officer. As regards what Major Somerville said, he took exception to the word

"rot" that I used. That came to me in a letter from a very celebrated crammer, and I adopted it as it came to me without question. It is, perhaps, rather an offensive word to use.¹ Then he went on to tell us that the standard of the papers at present set for the examinations is materially higher than it used to be; but he did not tell us what the examiners thought in their inmost souls of the candidates' work, and that strikes me as being by far the more important point. I have seen hundreds of papers in the course of my life which it would require a very high-class man to answer; but when the examiner has to deal with a lot of replies, he has to take what he can get, and that is not always the ideal he had in his mind. I repeat, that an examiner has to take what he can get, and it is not always, by any means, the exalted standard he would like to have.

A MEMBER OF THE AUDIENCE :—You mean that a difficult paper does not postulate good answers?

Lieut.-Colonel F. N. MAUDE :—Just so.

Major A. G. RICKARDS :—Major Somerville has gone, but I think he could have told us that the number of marks obtained, compared to the highest possible, was also high.

A MEMBER OF THE AUDIENCE :—There is no mechanical way of marking; there is no necessary connection between the paper and the answers; every examiner knows that.

Lieut.-Colonel F. N. MAUDE :—Then something was said on the question of the new Orders which were published this morning. There, again, I regret to say, that the one thing I had hoped to have seen—and many others with me—science, is not rendered obligatory. It is still possible for an officer to get into the Army with no knowledge of science, and if he has no knowledge of science he cannot know facts; and when he has to teach men technical matters, unless a man has a scientific training so that he can sift out the true from the false, he is of no use as an instructor. We have got lots of men who can lead. There is no difficulty in getting men who can lead, but what we want in peace are men who can teach, and we can fill up with the others afterwards. We would rather have teachers and leaders together if we could get them, but that is a counsel of perfection which it is almost impossible to look forward to. It is the teacher that we want. My quarrel with the present system is that the young officer does not know enough when he joins to be able to teach his own men. As regards the young Volunteers I mentioned, they varied from seventeen to nineteen years of age. I thought it would evoke a positive storm when I said that the board school educated boys were better educated than public school boys. It certainly ought not to be the case, that when you pay for education at a high-class public school, the result is not as satisfactory as it is with the board school, artisan class. They were quite youngsters; they were not trained mechanics, either. Again, Major Somerville referred to French and German as a

¹ I had written the word in the slang sense in which it is often used to explain, say, the sudden collapse of the wicket in a cricket match, and withdrew it as a concession to good English—not intending thereby a withdrawal from my position.—F.N.M.

means of teaching a man to think. That is true of all languages in a way, but they do not teach the kind of thought we want. Mathematics is the thing to teach them accurate thought. I have the keenest appreciation of the value of languages, but it is easy to learn a language if you have the gift of the ear, and experience does not show that linguists are accurate thinkers at all. With Colonel Pollock's remarks I can generally agree. We should all like to have plenty of ground to train our men on; but everybody else is in much the same difficulty.

Lieut.-Colonel A. W. A. POLLOCK :—Can I say a word? I think you misunderstood me. I do not complain so much of the absence of ground as the crowding of people upon it. I would sooner train a company on a ten-acre field or a public road than have a crowd of people telling me what to do. It is the interference, and having the ground more or less divided among a great number of companies that have to share it. You have a certain piece of ground and you go on to it, and then you find the cavalry or mounted infantry or the Royal Artillery come sweeping across it.

Lieut.-Colonel F. N. MAUDE :—With what Sir Power Palmer said I most cordially agree. In regard to what he said about the habit of people at large making scapegoats, of course it is a difficulty; but how are we to change human nature and get it to act otherwise? That is where the trouble comes in: You have to change human nature. If you begin at the beginning, and teach people to take responsibility when they are young, and they learn by degrees, in the future they will not be afraid of responsibility, or even be afraid of being "Stellenbosched." With regard to the officers not having inducements enough to work, I forget how many men there are, but I think there is at present more than one lieutenant-general under forty-eight years of age; and I do not know that any other Army in the world offers opportunities and chances like that. We cannot expect too much. If you think of the career of some of the most fortunate men in the Army, that ought to be an inducement to anybody. It has been mostly a matter of luck, good fortune, and reasonable hard work on their part. They have had the luck to be at the right place at the right time, and knew enough to take advantage of it. But, setting aside the question of promotion, I should like here to register a protest against this constant outcry for further "inducements" to perform one's duty—taking "duty" even in its narrowest sense—"the fulfilment of one's contract with the State." To my mind, this is one of the worst symptoms of our times, and marks most clearly the moral deterioration that has set in since Nelson's immortal signal was broken out along the lines at Trafalgar.

The CHAIRMAN (Mr. Spenser Wilkinson) :—Perhaps the meeting will allow me to make one or two remarks on the debate we have heard, and the paper. What struck me as the most important statement made in the paper was that which was made about the public schools. I am very sorry to say that there has been in the last year or two a great concurrence of evidence in favour of the view expressed by Colonel Maude, and afterwards by Dr. Miller Maguire, that the intellectual level of the public school boy at present is by no means what it ought to be. I do not think it is possible to take that state of things too seriously. I think that if our Army is to maintain its position among other Armies in the world it is absolutely necessary that the class from which Army officers are drawn, which is practically the class which sends its boys to public schools,

should raise its standard of education all round. I have myself a pretty decided opinion as to what the cause of that is. I have in the last three or four years been a good deal in contact both with public and preparatory schools and school-masters, and I think that our public school system has some features which are equalled by no other system in the world. Go down to one of our good preparatory schools, and you see those little boys being taken care of, being fed up, being taught, and, above all, their characters being formed in a manner which is done by no school of a similar class of boys in any country in the world. Go and see those boys in the cricket field and football field, and you see how they are being disciplined, how the masters take an interest in them, and how the boys are learning to lead and to obey; and you are delighted with it. But go to the same school and watch the lessons in class, and you find that, although there is plenty of vigour and plenty of interest in the work of the cricket and football field, the work of the class is too often regarded as something perfunctory—as a sort of task work that must be got through. What is the result? It is that your boy who goes to such a school, when he is, say, ten years of age, with a clear, open mind, ready to learn, when he leaves at fourteen or fifteen has ceased to take any interest whatever in any subject that is taught him. That is where the failure of our system comes in. I am not making a sweeping charge against the public schools or against the preparatory schools, but I say that phenomenon has been very widely noticed by competent observers. If you want chapter and verse for it I should refer to a book on public school life, published about a year ago by Mr. Benson, who was a master, if I am not mistaken, at Eton, who makes that very complaint. He says in that book that, from his observation, the boy goes there with a quick, ready intelligence, and he leaves it with all his interest dulled. That is the indictment against our public school system. I believe that what is required for the good, not merely of the Army, but of the whole nation, is that we should require from the masters in our public schools that they shall have the power of communicating an interest in knowledge. because I am coming directly to a point which I think has been admirably made by Sir Power Palmer. In my opinion, that is the whole question of instruction, that is, of intellectual training—I distinguish it from moral training, though the two are closely connected; but the vital thing the teacher and the instructor has to do is to awaken the interest of the pupil. As Mark Pattison said in a famous book a great many years ago, the vital thing in the process of education is the communication between the one mind and the other. An instructor's business is to pass in some way the electric flash, so that on the face of the pupil there is that look of recognition that the boy feels that he has got a new idea that is going to be useful to him. The boy goes into the cricket field, and he learns to play cricket, and when he finds he can hit the ball or strike the wicket with the ball he feels that he is a better boy than he was before. He is proud of himself; he can do something. Your schoolmaster has to produce that effect in his class-room—to teach the young so that the boy feels he can do something, and to give him an interest in it. That is the first thing. I should keep you much too long if I were to develop that as regards the general educational system. But I will pass from that, and merely say that the cause of the weakness of the public school system is, in my opinion and experience, largely due to the way in which the University system is at present managed; where you give far too little scope to the desire of the student for knowledge, and a great deal too much scope to the anxiety of his friends and relations that he should

get some large money prize; and therefore you put the whole of your University effort into the attempt to develop special powers on the lines of particular examinations, with this result: You find a man coming up to Oxford and Cambridge with an interest in knowledge; there is a subject he wants to learn. What happens when he gets there? The tutor says: "You had better let that drop; there is no scholarship for that; you will not get a first-class there; but if you will go into this, and let us cram this into you, you will get a first-class." The student finds that may mean money and degrees, so he drops the things he wanted to learn, and he allows his mind to be put through a mill which dulls it. We want a great deal more freedom at the Universities, a great deal less money prizes, and a great deal more inducement to the teacher, who will then try and stimulate the interest of the students. Now I will come to the Army. We have talked a good deal to-day about the general education of the class from which the Army officer comes, because you will never get an Army with a better general education than the class to which it belongs; you may be thankful if you get it as good. But when you get into the Army, I believe there the vital thing is to stimulate interest. I have often thought that we perhaps overdo it with the preliminary course, because the boy who has just left his public school, and has then to give a great deal of time to such subjects as military law, has not got in his mind the kind of curiosity which he ought to have to make him learn it. He needs the stimulus of a little practical experience in a regiment. There has been a very great improvement in the Army during the time I have been, more or less, in touch with Army officers—perhaps something over a quarter of a century. I remember twenty-five years ago the young officer did not take, as far as an outsider could tell, the slightest interest in what are called professional subjects. You might talk to him about tactics, but he did not take the slightest interest in the subject; he would not have anything to do with it. There is a very great improvement now in the interest they take in such matters. I was very much struck ten years ago, when I went to India, with that fact. I travelled about a good deal in the north and north-west of India, and made the acquaintance of a great many officers, and I was very much struck with what I saw in the Punjab Frontier Force, of which I saw a great deal. There I found that a young officer, a lieutenant, who had not been many years in the Service, was sent off on his own account, with nobody to look after him, to inspect a post perhaps fifty miles from the place where the regiment was quartered. He was the man in charge; he had a garrison of perhaps fifty native troopers or soldiers to look after; he had to go and see that all was in order, and he had to account for it when he got back. Now that young fellow wanted to learn something. He was very keen on knowing all about it, because you gave him responsible work to do and his men to look after, and said: "You are in charge of that, and you will be held responsible for it." Immediately he began to want to know all about it, and there was a keenness among the officers which certainly a few years before did not exist among the junior officers of the same standing at home. I believe that in military education, the first thing you have to do is to stimulate that interest by making a palpable connection between the officer's attainments and his prospects. I do not mean by that any particular theory of selection; but I do mean a little less examination and a great deal more inspection. Let it be understood that the superior officer is the person responsible for the capacity and the instruction of those below him, not by way of setting papers, but by way of seeing that

they do their work, because if you have a general in charge who means to have the business done he will watch the junior officers, and will not, as someone said in the case of instructional exercises for practice, want to sack the officer who makes a mistake, but he will see that that officer learns from his mistake, and will say, when a mistake has been made: "This is a bad mistake that you have made; you ought to have the knowledge which will prevent you making that mistake." The ways of getting knowledge are never obscure to the men who want to get it. It is the *will* we want. Within my experience—and I have been in contact with a good many classes of life, and a good many professions—it is not within my experience that the man who really means to know a subject ever fails to get to know it. If a man tells you: "I should like to know French and German, but I am so busy," I do not believe him. The man who wants to know French gets to know it; and the man who means to get a knowledge of any subject can always manage to get to know it. What you want is the determination to get to know it. I believe there is a good deal more of that in the Army than there was; and I think one of the effects of the South African war has been to stimulate an interest in professional knowledge which did not exist before. I do not agree with those who run down the British officer. The British officer of the junior ranks is intelligent, is keen, does his duty, and uses his wits; but perhaps he has not always been enough encouraged, perhaps he has not seen in many cases that the system induced him to press on in the line in which he was naturally inclined to press on. I do think there has been some laxity in the last few years in the scrutiny of the general educational standard of those who were taken into the Army. I very much wish that that Order which Dr. Miller Maguire read out, and which I think some of us have heard of before, could be very widely known and circulated among the public school masters and public school boys. I am afraid I have trespassed more than I intended upon your time. I only wish to say now that I have listened with very great interest to the various speeches that we have heard, and to the paper which was read, and I am sure you will authorise me to express on your behalf your thanks to Colonel Maude for coming here and opening this debate.

THE NAVY AND THE NATION.

*Speech by Sir GEORGE SYDENHAM CLARKE, K.C.M.G., R.E.,
F.R.S., Governor of the State of Victoria.*

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IN the history of the nations that have attained real greatness, some determining causes or characteristics can generally be traced. It was not a chapter of accidents that enabled the Greeks to spread their colonies over the shores of the Mediterranean and to give art and literature to the world; that led the Romans from a little village on the Tiber to vast dominions; that launched Carthage on a career of commercial supremacy; that built up the Empire of Spain in the western hemisphere; that conferred high honour upon Portugal in the field of maritime exploration; that carried Dutch trade and settlements into many lands; that welded France into a formidable naval and military Power; and that, in comparatively recent years, has created the United States, a united Italy, and the German and Russian Empires. In none of these cases is the determining source of greatness so clear and so consistently manifest through many centuries as in our own national history. We owe all to the inherent capacity of our race for the service of the sea. I do not wish you to infer that other qualifications have not combined in the creation of the magnificent fabric of the British Empire; but I do assert that none of these qualifications would have sufficed to secure our present position among the nations if the people of two little islands had not, from an early period, developed the instincts of the sea, and maintained these instincts for nearly a thousand years. By the instincts of the sea I do not mean only aptitude for a sea life, but that aptitude associated with great fighting qualities. Maritime peoples have, over and over again, gone under either for want of fighting power, or because they have neglected to cherish their fleets. The British people have never failed in fighting power; but, at several periods, they have neglected naval preparations to a dangerous extent, and have incurred heavy losses and far heavier risks. Up to the present time, however, our sea power has always been re-asserted in time to avert national disaster. Though temporarily led aside by the glamour of military victories, by the vain ambition of European dominion, or by the baseless theories which gain acceptance in peace time, the nation has instinctively turned to the fleet in great emergencies, and it has been hitherto possible to repair neglect and to rehabilitate the Navy before disaster supervened. Since the long series of great wars, which ended in 1815, a new order has arisen. In the first place, the rival Navies—like the Armies—of to-day are maintained in a state of efficiency and preparation for war unknown in the past. In the second place, the British stake in the sea has enormously increased since the period of great naval conflicts. In

1815, the annual value of the sea-borne trade of Great Britain was about £96,000,000, considerably less than that of Australasia alone to-day, and the gross annual value of the commerce of the Empire and of the shipping which carries it cannot now be less than £1,600,000,000. It is almost impossible to realise what such figures mean; but it can safely be asserted that the Empire depends absolutely on sea-borne commerce, in which, directly or indirectly, every citizen is interested, that the loss of this commerce as the result of our being overpowered on the seas would bring ruin and disruption, and that the guardianship of our means of existence and our hope for the future depends wholly upon the efficiency and sufficiency of his Majesty's Navy. Australians, who live apparently secure in this Southern Ocean, and who are naturally much engrossed in their local problems, may easily come to forget the force to which they owe alike their territorial integrity, their progress, and their prospects of future development. Averages are apt to be misleading; but it is a fact that per head of population Australians have a larger stake in sea-borne trade than the people of the mother country.

I want to try and bring before you the salient facts of our wonderful naval history, to indicate the great turning points in that history, to show what naval supremacy has conferred in the past, and then to say something as to the present situation.

When Cæsar landed in 55 B.C., he found a country of dense forest and morass, inhabited by a people little more organised than the Australian aborigines; but it is clear that the Ancient Britons carried on a desultory trade across the Channel. During the Roman period of 460 years, great roads were driven through the country, and agriculture was so far developed that corn was largely exported to the Continent. As the Roman power decayed at its centre, the hold upon England—Scotland and Ireland never wore the Roman yoke—steadily weakened, and before the final abandonment, about the year 409 A.D., the inroads of the sea-faring races of Northern Europe had already commenced. England began to be re-colonised by Saxons, Jutes, and Angles, who founded separate kingdoms. Wave after wave of sturdy barbarians broke upon our shores, and brought with them the strongest instincts of the sea. It was unquestionably this irregular and continuous invasion which stamped those instincts indelibly upon the mixed race which grew up in the islands. We may be sure that it was the very pick of the hardy seamen of the period who quitted their homes in search of adventure in a strange land; and it might have been predicted with certainty that the race thus built up, as soon as it became welded into a homogeneous state, would show special aptitude for the service of the sea.

The records of the Saxon period are obscure; but some great names, and one great lesson, stand out clearly. At the end of the eighth century an invasion was threatened by Charlemagne, and Offa, King of Mercia, seems to have grasped the true principle that over-sea invasion should be met by naval force. He set himself to build up a fleet which Charlemagne thought well to respect, and the Saxon chronicles tell us that Offa, "after a glorious reign of 39 years, bequeathed to England this useful lesson, that he who would be secure on land must be supreme at sea." Offa's fleet was allowed to decay, and the Danes raided at pleasure, half ruining the country, till Alfred the Great, towards the end of the ninth century, undertook the creation of a fleet, designed ships himself, and checked the Danish marauders in the only effective way.

Alfred's ships, according to the Saxon chronicle, "had 60 oars, and some had more; they were both swifter and steadier, and also higher than the others. They were shapen neither like the Frisian nor the Danish, but so as it seemed to him would be best."

Athelstan and Edgar cherished their fleets, and the latter even maintained separate squadrons on different parts of the coast, and inspected them himself. After Edgar's death, in 975, the Navy sank into inefficiency. A great Danish invasion followed, and the short-lived Danish dynasty was established in 1016. Nine years later English ships crossed the North Sea, and played an important part in the conquest of Norway. This is memorable, because it was the first over-sea venture of an English naval force, and the early promise of what the future held in store. During the period of 650 years, between the Roman evacuation and the Norman Conquest, the genius of the sea which has ruled the destinies of our race had its birth, and it is remarkable that, even in such early days, those of the Anglo-Saxon kings who devoted care to their fleets secured immunity from invasions and raids, and gave prosperity to their country. Harold had made preparations to resist the coming of the Normans; but he was called away at the critical moment to fight the Danes in Yorkshire, and his fleet, anchored at Sandwich, dispersed during his absence. According to the Saxon chronicle, the provisions ran out, and the men went off to their homes, so that there was no naval force to oppose William the Conqueror.

The Norman Conquest opened a new era in our history; but the Normans themselves sprang from the same stock of Norse pirates which had colonised England. Settled on French soil, they had advanced more rapidly in art and civilisation than their kindred across the Channel. They brought new customs into England—customs good and bad. They introduced new weapons, new architecture, a new military system, and a higher standard of living; but their barons, bishops, and knights retained the traditions of their pirate ancestry, and they helped to develop the instincts of the sea.

The most important result of the Norman Conquest was, however, a long series of at least sixteen wars arising from the efforts of successive English kings to extend or maintain their French possession.

These many wars were waged with varying success. At the end of the short and heroic reign of Henry V. England held most of France north of the Loire, and Henry VI. was crowned in Paris in 1431. Rapid decay then set in till, in 1453, only Calais remained.

Throughout this long period, English armies freely and constantly crossed the Channel, the French coasts were frequently raided, and long campaigns were fought on French territory. There were some great naval victories, and there were also times of marked naval weakness, notably the reign of Richard II., when John de Vienne, the first great French admiral, reinforced by Spanish and Scotch ships, swept the Channel, and ravaged the southern and eastern coasts. But, directly attention was re-directed to the Navy, the coasts became secure, and that all the many campaigns were fought on French soil proves conclusively that the command of the Channel was, on the whole, maintained.

Looking back through this period of history we can very easily trace the dominant influence of naval force; but great principles are not readily learned, and a consistent policy could not be expected in times fraught with internal dissensions. It is clear, however, that

necessity constantly enforced attention to naval requirements, and that whenever the fleet was properly maintained it ruled the narrow sea.

There must have been some few clear brains which recognised, even in those early days, a general law of preservation. About the year 1440, an anonymous writer produced an elaborate poem, which ends with the following significant lines:—

“ Keep then the sea that is the wall of England,
And then is England kept by God's hand;
So that for anything that is without
England were at peace withouten doubt.”

It is interesting to compare these lines with those of Campbell, written more than 350 years later:—

“ Britannia needs no bulwarks,
No towers along the steep;
Her march is o'er the mountain waves,
Her home is on the deep.”

Here we have exactly the same idea expressed in different language. To the anonymous poet of the 15th century only the security of England presented itself. Scotland and Ireland lay outside his purview. Campbell, writing early in the last century, could not have realised the Empire as we now know it. Yet, both struck a true note, and formulated the principles of a sound national policy infinitely more important to us than to the people of their days.

Until the reign of Henry VII. there were no regular war-ships. Vessels were hired or commandeered from merchants as required, and fighting men were put on board. Thus, the mercantile marine became the fighting navy when required. Trade and war went hand in hand, and this arrangement continued in some form till a much later period. In the Spanish-American war of 1898 no less than 102 vessels of various kinds were hired by the United States Government, and four great mail steamers were armed. The hired ships rendered valuable assistance in many ways to the regular Navy, and some of them were actively engaged with the enemy. The possession of a vast mercantile marine would be a supreme advantage to us in a naval war.

Guns had begun to be carried on board English ships in the reign of Edward III., and their growing use tended to bring about the specialisation of war-vessels. The early guns were all breech-loading, and it is difficult not to believe that they were quite as dangerous to their crews as to an enemy. It is clear, however, that English seamen took kindly to the use of artillery, and, though progress was at first slow, they proved, in the conflict with Spain, to be well ahead of their enemy, both in the ordnance at their disposal and in their skill in handling it.

The conflict with Spain in the reign of Elizabeth provided English seamen with a great opportunity, and marked a turning point in history. Spain was then the greatest Power in Europe, with rich possessions in the New World, and a large and valuable trade with the East and West Indies. If, therefore, the Spanish Navy should suffer a great defeat, it was certain that English maritime ambitions would receive a strong impulse. Already, before the hapless Armada sailed, Sir Francis Drake had made a descent on Cadiz, destroyed or taken about 100 Spanish vessels, ravaged the coast as far as Cape St. Vincent, and, stretching down to the Azores, captured a large East

Indiaman. When at length the Armada was ready to sail, the English officers were keenly anxious to be permitted to strike in Spanish waters. "The opinion," wrote Lord Howard to Elizabeth's Council, "of Sir Francis Drake, Mr. Hawkyns, Mr. Frobisher, and others that be men of greatest judgment and experience, as also my own concurring with the same, is that the surest way to meet with the Spanish fleet is upon their own coast or in any harbour of their own, and there to defeat them." Howard and his captains were not allowed to have their own way, and were overruled by men who knew nothing of naval matters; but that they should have unanimously urged the adoption of a sound principle of strategy shows how far naval experience had advanced by the year 1588.

There are many points of interest in the Armada campaign. The plan of the Spanish King was that his vast array of ships should sail up the Channel, and effect a junction with the Duke of Parma in Flanders, whose veteran army, reinforced by the troops carried by the Armada, was to cross the Channel for the invasion of England. Elizabeth's military force was very small, and would have been unable to resist the army of at least 35,000 trained troops which was to be brought against it. The Duke of Medina Sidonia, who commanded the Armada, was instructed not to fight if he could help it, but to join hands with the Duke of Parma as quickly as possible. This was a thoroughly bad plan, because it did not take account of the English fleet. The Duke of Parma was prevented from going to sea by the Dutch ships which watched his ports. He could do nothing unless the Armada proved able to inflict a crushing defeat upon the English squadron and to secure full naval command of the Channel. The orders to Medina Sidonia should, therefore, have been:—"Seek out the English fleet, use every effort to defeat it, and then join hands with Parma." Now, it is a curious fact that, more than 200 years later, Napoleon devised a similar plan, and showed a confusion of naval ideas closely resembling that of Philip II. He also seems to have failed to realise that the necessary first step was to win an absolutely decisive naval victory, of which there was no reasonable probability. In 1588, however, Spain was regarded as by far the most formidable naval Power in existence, and English seamen had never before encountered such a huge force as was to be brought against them. Philip's misconception was, therefore, more excusable than that of Napoleon, and the sturdy confidence of Elizabeth's captains shows how deeply they were penetrated by the true instincts of the sea. As Howard wrote to Lord Burghley:—"I doubt not but to make Her Majesty a good account of anything that shall be done by the Spanish forces. . . . I protest before God, and as my soul shall answer for it, that I think there were never in any place in the world worthier ships than these are, for so many." At the same time Sir Francis Wynter wrote from H.M.S. "Vanguard," in the Downs:—"Our ships do show themselves like gallants here. I assure you it will do a man's heart good to behold them; and would to God the Prince of Parma were upon the seas with all his forces, and we in the view of them."

There, more than three centuries ago, spoke the true spirit of the British seamen, the spirit which in later days was to carry the flag to victory in many seas, the spirit which is the heritage of His Majesty's Navy to-day.

The "most fortunate Armada"—that was its official title—sailed slowly up the Channel, and was attacked off Plymouth, off Portland,

and off the Isle of Wight, till, harassed and discouraged, it anchored off Calais. Here fire-ships were employed, which sufficed to make the Spaniards cut their cables and go to sea. The next day they were again caught off Gravelines, and a running fight of nine hours followed. The rest was tragedy. A shift of wind saved the Armada from being wrecked on the Dutch coast, and then, in Lord Howard's words:—"Notwithstanding that our powder and shot was well near all spent, we set on a brag countenance and gave them chase, as though we wanted nothing, until we had cleared our own coast and some part of Scotland of them."

The "most fortunate Armada" rounded Scotland and Ireland, strewing wrecks on their shores, and of 130 ships—more than half, with 20,000 men, were lost.

There was no great naval action, no employment of the fleet tactics, which were to be developed later; but Queen Elizabeth's Navy gave a fine exhibition of fighting power and of seamanship, and England was delivered from a great peril by naval means alone, notwithstanding that the Council neglected to make proper provision for supplying the ships, and refused to permit the sailors to carry out their perfectly sound plan of campaign. The disastrous failure of the Armada had far-reaching results. If Spain, then at the height of her power, had not been defeated at sea, the history of North America would have been different, and it is doubtful if the great United States, with laws, customs, language, and civilisation of British type, could have arisen. To the England of 1588, the defeat of Spain opened out the vista of Empire which was clearly seen by Raleigh, although the full realisation was to be slow and chequered. Henceforth the New World of the West, and the very Old World of the East, lay open to British maritime enterprise; and thus, at a great crisis in our history, it was the Navy that determined the onward progress of the nation.

After the death of Elizabeth, the fleet steadily deteriorated, and the Civil War, which began in 1642, effectually checked the process of expansion. The Dutch wars of Cromwell and Charles II., which all arose from commercial rivalry, proved a stern school of experience for the Navy, which has never met stouter antagonists on the sea than the Dutch. The people who in 1899 believed that the war in South Africa would be an affair of weeks must have been strangely ignorant of Dutch history. Under the strong rule of Cromwell, the first of these wars was brought to a triumphant conclusion by naval means alone. The Dutch, dependent on commerce, as is our Empire now, were forced to submission without landing a man upon their shores. Blake, the great Admiral of the Commonwealth, was then free to take a strong squadron into the Mediterranean, with orders "to procure satisfaction from such Princes and States as had either insulted the Government or injured the commerce of England"; and Cromwell thus used the Navy with marked effect to vindicate the honour and to guard the interests of the nation. Cromwell's Spanish war yielded the very important capture of Jamaica, which established a strong foothold in the West Indies. The second Dutch war was remarkable for the capture of New York, and for a series of hard-fought actions, ending in a brilliant victory off the North Foreland, which gave the command of the sea to the English Navy, and enabled great damage to be inflicted on the Dutch coasts. In the following year (1667) Charles II. laid up his main fleet in order to save expense, and restricted his aims to commerce destroying. The result was that a Dutch squadron sailed up

the Thames and Medway, and this disgraceful episode has frequently been used as an argument for excessive local defences, instead of being treated as a warning for all time of the danger necessarily attending the policy of Charles II.

William III. imported into England a French war and a Dutch alliance. The Navy of Louis XIV., carefully built up by Colbert, was the best in every sense that France had ever possessed, while England laboured under the combined difficulties of military operations on the Continent, a rising of Highlanders, protracted hostilities in Ireland, and internal dissensions. The allies fought an indecisive action off Beachy Head with a considerably superior French fleet, and withdrew, leaving the enemy in apparent possession of the Channel; but the menace of an undefeated naval force prevented anything more than a hasty raid on Teignmouth, where some small craft were burned. The great French invasion, planned under the auspices of a deposed English King, secretly advised by one of the greatest of English generals, did not arrive, and the fine fleet created by Colbert, after receiving a crushing blow at La Hogue, gradually sank into decay. The naval war of William III. was not brilliant, and did not contribute directly to the expansion of England; but, although British commerce suffered much by reason of the little judgment shown in handling the fleet, the allied English and Dutch gained their objects.

In the war of the Spanish Succession, which began with the reign of Queen Anne, the English and Dutch fleets acted on the offensive from the first, and after the important battle of Malaga their command of the sea was unchallenged. There were few brilliant naval successes, for the capture of Gibraltar with a garrison of 80 men was not a great feat; but trade was, on the whole, well protected, and, in spite of the determined efforts of French commerce-destroyers, English merchant-vessels gained a reputation for safety. On the Continent, Marlborough was winning dazzling military victories, but it is clear that all heads were not turned away from the sea. In 1708, the year of Oudenarde, the House of Lords presented the following address to Queen Anne:—"It is a most undoubted maxim that the honour, security, and wealth of the kingdom depend on the protection and encouragement of trade and the improving and right managing our naval strength. Other nations, which were formerly great and powerful at sea, have, by negligence and mismanagement, lost their trade and seen their maritime strength entirely ruined. Therefore, we do in the most earnest manner beseech Your Majesty that the sea affair may be always your first and most particular care."

It was the Navy, not handled with conspicuous ability (for these were the days of councils of war on all occasions), but used offensively, that made the war of the Spanish Succession a fresh starting point in our Imperial progress. Gibraltar, Minorca, Newfoundland, Nova Scotia, and the Hudson Bay territories were added to the Crown, and a great impetus was given to the national trade.

The accession of George I. introduced a fresh Continental entanglement, leading to many complications, and to a naval war with Spain, prefaced by Admiral Byng's victory off Cape Passaro. For the first time the British Navy was shown in force in the Baltic, where the first Russian sea-going fleet, built by Peter the Great, had made its appearance. This war cannot be said to have promoted expansion, or to have conferred any marked national advantage.

Another Spanish war began in 1739, and merging later into a French war, involved England in a series of military campaigns on the Continent, which, after Dettingen, were generally unsuccessful. Anson, off Finisterre, and Hawke, off Belleisle, won naval victories, and the capture of Louisbourg was of real importance. The naval operations were far-reaching; a projected French invasion in aid of the Pretender came to nothing, and the fact that our trade increased more than 15 per cent., while the commerce of France was nearly ruined during the war, proves its general success; but the Treaty of Aix-la-Chapelle secured no territorial gains.

The Seven Years' War, which began in 1756, was the starting point of the long conflict between France and England for maritime and Colonial supremacy, which laid the foundations of our Empire, and rendered possible the Australian Commonwealth. This great war began with the loss of Minorca, for failing to relieve which, with a badly-equipped fleet, the unfortunate Admiral Byng was shot; but Pitt soon succeeded in imparting a vigorous impulse to the national policy, and in turning the maritime strength of England to splendid account. The customary French invasion was duly prepared in 1759; but Hawke, in Quiberon Bay, shattered the fleet of de Conflans, and crippled the naval power of France. Island after island in the West Indies fell. The conquest of Canada was completed by the capture of Montreal, and the French cause in India received a fatal blow. No war had been so wide-reaching in its operations, so triumphantly successful, or so supremely important in results. The Treaty of Paris brought Canada, Nova Scotia, Cape Breton, and the islands of Tobago, Dominica, St. Vincent, and Granada, together with Senegal, under the flag. Florida, and the right of cutting timber in Honduras, were ceded by Spain in unequal exchange for Havana and the Philippine Islands. Never before had the tremendous weapon of sea-power been wielded with such effect, and Pitt showed a directness of purpose which recalls the days of Cromwell. So complete was the maritime supremacy asserted during the Seven Years' War, that British trade actually increased during its course by more than 30 per cent.

In the great conflict which began with the revolt of the American Colonies, the Navy was overstrained. When we were deeply involved in military operations across the Atlantic, France declared war, followed by Spain and Holland, while the remaining maritime Powers—Russia, Sweden, and Denmark—formed a menacing alliance of armed neutrality. England was quite unprepared for a conflict of such dimensions, and only naval defeat was needed to insure national disaster. This condition was not fulfilled. Rodney defeated the Spaniards off Cape St. Vincent, and later won a great victory over the French off Guadaloupe, while Parker held his own in a hard-fought action with the Dutch off the Doyger Bank. There were humiliations on land, but none at sea, though the necessity for periodically relieving Gibraltar threw a heavy burden on the over-taxed Navy. Even in distant India a dangerous situation was ultimately restored, and Suffren, one of the best of French admirals, who had vainly contended with Sir E. Hughes for mastery in Indian waters, was driven to exclaim, "God be praised for the peace."

Want of adequate preparations told against England in the great war of American Independence, and although the naval establishment was increased from 18,000 seamen and marines to 110,000, and the number of fighting ships in commission from 102 to 440, there was not

a sufficient margin of naval strength to deal with the combined forces of the maritime Powers. The immense strain of the military operations in America goes far to account for this insufficiency, and it followed that the trade of England decreased during the war by 27 per cent.

The Treaty of Versailles left England shorn of her North American Colonies except Canada, but with her naval prestige untarnished and her future powers of expansion, therefore, unchecked; France gained nothing by American independence, which was decided upon the sea by her fleet, in conjunction with those of Spain and Holland, and the strain of the war fell far more heavily upon her than upon her rival. The loss of the American Colonies marks another real turning point in our history; but this loss has proved a gain. The great lesson which Burke strove to impress was learned by bitter experience. "I was ever of opinion," he wrote, "that every considerable part of the British dominions should be governed as a free country; otherwise I know that, if it grew to strength and was favoured with opportunity, it would soon shake off the yoke intolerable in itself to all liberal minds and less to be borne from England than from any country in the world."

The present system of self-governing Colonies, which has led to such immensely important and beneficial results, had its foundation in the war of American Independence.

Only ten years of peace followed before Britain was involved in the greatest war the world has ever seen, which lasted, with a brief interlude, for twenty years. It was, in the main, a contest between the tremendous forces generated by the French Revolution, and wielded with consummate skill by Napoleon, and the sea-power of Great Britain, which found its supreme embodiment in Nelson. The genius of land warfare met the genius of the sea, and was first baffled and then overmastered. The first period of the war began in 1793 with a coalition against France, but two years later Holland was forced into a French alliance, and was followed by Spain. Caution at first marked the employment of the fleets on both sides, and no great naval action occurred for sixteen months, until Lord Howe defeated the French Brest fleet far out in the Atlantic, where it had gone to protect a valuable convoy coming from America. Minor successes only were won in the Mediterranean during the years 1795-96, and in the latter year Napoleon began his wonderful career with his fine campaign against the Austrians in Italy. The year 1797 was memorable for the great victory off Cape St. Vincent won by Sir John Jervis, with 15 ships, over the Spanish fleet of 27, in which Nelson found his first great opportunity, and used it brilliantly. In the same year, Duncan decisively defeated the Dutch off Camperdown; but the disaffection which spread from Spithead to the squadrons at sea hampered our naval action for a time, and on land the Republican armies were uniformly successful. A great victory at sea was urgently needed to redress the balance, and it was soon forthcoming. On 1st August, 1798, Nelson almost destroyed the French Mediterranean fleet in the battle of the Nile. The Mediterranean had been temporarily abandoned, and when Nelson entered it in May the French were in undisputed possession. At the end of the year two French ships of the line, both afterwards lost, remained there. No victory has been more complete or more far-reaching in effects than the battle of the Nile. It locked up a French Army in Egypt, which, after much suffering,

was driven to surrender. It led to a second great coalition against France; it determined the command of the Mediterranean for the rest of the war; and it gave us the important fortress of Malta.

Again the coalition broke up under the stress of Napoleon's military campaigns, and England was isolated, and menaced by a formidable maritime league composed of Russia, Sweden, and Denmark. It became necessary to strike a heavy blow in the Baltic, and Nelson, at Copenhagen, obliterated the Danish fleet, and put an end to the northern confederacy.

The Peace of Amiens, signed in March, 1802, ended the first period of the war, during which the naval supremacy of Britain was triumphantly asserted in face of a combination of all the Maritime Powers of Europe. The military expeditions to Holland had ended in failure or worse; but the Navy responded to the national need, and revolutionary France, victorious on land, had not been saved by her numerous allies from being overpowered at sea.

The mighty contest for maritime and colonial supremacy was not ended, however; since the ambitions of Napoleon, now made First Consul for life, and soon to be Emperor, had been whetted by his great military victories, and he failed as yet to realise that the sea-power of Britain lay directly across his path.

In May, 1803, the British Government, assured of Napoleon's designs, declared war. There had been unwise retrenchment during the brief peace, and the Navy had suffered in material; but its *personnel*, long trained in war, was unrivalled. In numbers of ships it was approximately equal to France and Spain. The naval history of the second period of the war centres round the great drama of the Trafalgar campaign. Along the shores of France, around Boulogne and six neighbouring ports, the Grand Army of 130,000 men was gradually assembled, while 2,200 flat-bottom boats were provided for their transport across the Channel. Reckoning, as all previous would-be invaders had done, on a rising in his favour, Napoleon announced that he only required to be master of the Channel for six hours in order that, as he expressed it, "England should cease to exist." The time was afterwards extended to fifteen days, and then to two months. As I have already said, Napoleon seems to have thought that if he could secure a great concentration of ships in the Channel his huge flotilla would be able to cross. Shorn of details, his plan was that the Toulon fleet, with a considerable number of troops on board, should proceed to the West Indies, and, after capturing various British islands, should return to Europe to release the ships blockaded at Ferrol, Rochefort, and Brest, thus forming the desired concentration in the Channel. It does not seem to have occurred to Napoleon that Nelson would, with certainty, follow the Toulon fleet, and would not be far behind it, that the British squadrons blockading the Channel and Atlantic ports would draw up-channel towards each other, that in the Downs, in the North Sea, and at Spithead, there were a number of additional British ships, and, finally, that at best there must be very hard-fought actions, which, even if successful, would seriously cripple the French fleet. Would it then have been able to protect the helpless flotilla against the large force of frigates and sloops which would yet remain to Great Britain? We cannot know; but it is certain that nothing short of an overwhelming naval victory would have met Napoleon's requirements, and of such a victory there was no reasonable prospect. You may have read in some veracious histories

that Nelson was skilfully decoyed away, leaving England exposed, and that only by a stroke of luck he managed to return in time to win the battle of Trafalgar, and to save his country from disaster. All this is pure fiction; the luck, if there is such a thing, was on the side of Napoleon. A fair wind took Villeneuve, the French admiral, and his fleet out of Toulon, and into the Atlantic. Then came a change, and Nelson, in pursuit, took three weeks to reach Gibraltar. A month later Nelson received false news at Barbadoes, which saved Villeneuve from being destroyed in the West Indies. Returning across the Atlantic, he was met off Cape Finisterre by Sir Robert Calder, who, with an inferior fleet, captured two of his ships, but did not follow up the advantage. Villeneuve, saved a second time by the want of vigour, for which Calder was tried by court-martial, now put into Vigo, and four days later moved to Ferrol; while Nelson, from Gibraltar, joined Cornwallis off Brest, and then went on in the "Victory" to Portsmouth. The great game of war was now played out, and Napoleon's plan had failed utterly. The British forces were more concentrated than his own, and were incalculably superior in fighting power and in sea training. Urgent orders were sent to Villeneuve to move from Ferrol, and he put to sea, after writing to the Minister of Marine:—"The enemy's forces more concentrated than ever, leave me little other resource than to go to Cadiz." Here he arrived on the 20th August, and was blockaded by Collingwood with 26 ships of the line; while Nelson was spending his few last days in England. Five days later Napoleon wrote to Talleyrand:—"My decision is taken; my movement is begun. Three weeks hence I shall be in Germany with 200,000 men." The Grand Army had started for the Rhine, and the great flotilla was left to rot on the shores of France. Two months later the battle of Trafalgar was fought. Villeneuve, with 33 French and Spanish ships, trying to get back into the Mediterranean, was brought to action by Nelson, with 27 ships, and the British Navy won its greatest victory, and lost its greatest admiral.

The battle of Trafalgar thus had nothing to do with the saving of England from an invading Army which was in Germany when it was fought; but it was the triumphant ending to a long naval campaign, and the results were supremely important. The command of the sea was unchallenged during the rest of the war, and Napoleon was driven to the dangerous expedient of seeking to destroy our commerce by imposing his Berlin and Milan edicts, directed against it, upon the whole of Europe. This led straight to the terrible disaster of his Russian campaign, while Great Britain, rendered free to strike by her Navy, concluded a Spanish alliance, and began the Peninsular campaign, which brought her troops to Paris. So effective was the work of the Navy that British trade increased 118 per cent. during the twenty years of naval war, and Captain Mahan estimates our total loss by capture as less than 2½ per cent. The long conflict did not confer any great territorial acquisitions, except the Cape of Good Hope, which was of first-class importance; but it endowed us with a maritime and Colonial supremacy, which has endured, and a naval prestige which has over and over again saved us from war. The Empire, as we now know it, far transcending the rosiest dreams of Raleigh, is the direct gift of the sea, won in the series of great wars which ended in 1815.

I hope I have not wearied you by attempting to give a bird's-eye view of naval history during a thousand years. There is no other

history which is comparable in brilliancy, and I strongly hold that no one who does not know its broad outlines is fit to help to govern our Empire.

The Navy has never known a great defeat; nor has it ever failed the nation, except when it has been deliberately or ignorantly neglected. Even so, as soon as it was again cherished and adequately maintained, it instantly responded and resumed the sovereignty of the sea. You will agree with me that this long and consistently glorious record is not the result of accident. Chance could not have ruled that fleet after fleet, carefully constructed, and as carefully administered by France, should be shattered by British seamen; that, one by one, the maritime Powers went down in the contest with Great Britain; and that, before the close of the last great naval war, the Navy stood alone confronting the fleets of the world, and their recognised superior.

Voltaire, asking himself, "What can be the reason of this continued superiority?" replies:—"Is it not that the sea, which the French can live well enough without, is essentially necessary to the English, and that nations succeed best in those things for which they have absolute occasion?" Only inherited instincts of the sea, developed and intensified by necessity, constantly enforced upon the British people during many centuries, could have enabled us to have won our Empire. Only by maritime strength can we hope to hold it.

Since the mighty contest which gave Australians undisputed and secure possession of the fine resources of this great continent, at a cost of tens of thousands of gallant lives, and an addition of more than £620,000,000 to the debt of the mother country, there have been striking changes in the material of Navies and in the distribution of naval force. Steam and steel have replaced the sails and the oak which our great admirals handled with consummate effect. The Navies of Spain and of Holland, formerly important factors, have shrunk to small dimensions, and three new fleets—those of Italy, Germany, and Japan—have come into existence. In battle-ships, France still stands second to Great Britain, but with less than half the force, and is followed in order by Germany, Russia, Italy, the United States, and Japan. It is probable that within a few years the United States will stand next to France. In cruisers built and building, the order is the same, except that the United States stands above Russia. Great Britain has a distinct superiority in battle-ships and in cruisers over the two next Powers. In first-class battle-ships completed we shall next year be equal to any three Powers. Our total naval expenditure is now nearly equal to that of France, Russia, and Germany combined, and we can build war-ships more quickly and more cheaply than any of these Powers. The important alliance with Japan would, in certain contingencies, bring seven battle-ships and thirty-three cruisers, all concentrated in the China seas, into line with the British Navy, and no European fleet is more efficient in proportion to its numbers, or manned by better fighting men, than that of Japan. A feverish naval competition still continues, and is most marked in the case of Germany and the United States, while Japan has lately had the patriotism to lift her Navy out of the sphere of party politics. France of late slackened somewhat, in building battle-ships especially, but is now building six of the first class; Russia continues steadily to increase both battle-ships and protected cruisers.

I consider that our present position is satisfactory. Both absolutely and relatively, to probable enemies, the British Navy has never been so strong, or so efficient in peace time as it now is; but this result has been attained only in recent years, and by strenuous efforts. During last century there were periods of dangerous weakness. We had ignored the plain lessons of our history; we lived upon the prestige of the past, and we courted disaster. There can be little doubt that our marked efforts since 1889 to build up the Navy have stimulated a competition which would not have become so acute if we had maintained a consistent policy. Our naval estimates have been doubled, and their present amount, more than £34,000,000, exclusive of India and the Colonies, must throw strain upon our resources, especially as we have not yet adapted our military organisation to our real requirements, and our normal Army expenditure has mounted up to more than £27,500,000, not including the cost of over 70,000 Regular troops serving in India. In view of these enormous figures, I think that you will agree that the mother country is fully alive to her vast responsibilities, and is making splendid efforts to maintain that supremacy at sea which is the surest guarantee of peace, and which in war is the only means of guarding the commerce upon which the Empire, and most especially Australia, absolutely depend. On two recent occasions, at the time of the Fashoda incident, and during the critical period of the South African campaign, the Navy stood directly and effectually between the nation and a great war.

There are some persons who seem to find pleasure in discovering special sources of danger to the Empire, and you may have been told that the sea is an "unstable element," that naval operations are, therefore, uncertain, that changes in ship-building and in armaments have operated to our disadvantage, and that the lessons of the past are valueless in view of the unknown conditions of the future. I ask you to reject unhesitatingly all such suggestions. Our history proves conclusively that, while the land has proved too frequently treacherous, the sea has been our constant ally, always faithful except when we have neglected its claims. The certainty of our operations at sea, whenever we have cherished the Navy, whether in Saxon, Plantagenet, Tudor, Cromwellian, or Georgian times, has been their most striking characteristic. The fleets of the present day differ less in their methods of fighting from those wielded by Rodney and Nelson than did the latter from those of Richard I. and of Edgar. During the great wars with France, French ships were generally better designed than our own, and more quickly built. No one would maintain that this was now the case, and the change to steel construction has given an increased advantage to a country which could turn out steel steam tonnage to the amount of 1,000,000 in a year. There is something fresh to be learned in every war; but the sum total of our experience of modern fighting at sea is already considerable, and in every case, whether at Lissa, in South American, or Cuban waters, or in Korea Bay, the old lessons of naval warfare have been strikingly reaffirmed. Now, as in the distant past, the command of the sea can be obtained and held only by an offensive campaign against an enemy's squadron, bringing them to action if they will fight, keeping touch with them if they decline. The words of Drake, written 315 years ago, stand with enhanced force to-day:—"My opinion is altogether that we shall fight them much better cheap upon their own coast than here."

That is the policy enforced by the whole teaching of naval war, but more important for us now than in the past because of the enormous increase of our national trade. A decisive naval victory at once simplifies the protection of commerce; and, if an enemy refuses great naval actions, his squadrons in port must be closely watched and followed if they move. With this main object in view, our preparations for war must be and are being made. We divide the sea into naval stations for administrative and police purposes in time of peace, proportioning our strength in each to that of possible antagonists, and with a special eye to the bases from which hostile fleets could act. For this reason the bulk of our force is in home waters and in the Mediterranean, the other great aggregation of ships being in China waters for obvious reasons, and a comparatively small squadron being maintained in the South Pacific. I need hardly say that these arrangements cannot be maintained in war, and that if we confined our squadrons to their stations we should play the enemy's game. If Nelson, in 1805, had been chained to the Mediterranean the Trafalgar campaign might have had another ending, and the world's history might have been different reading. You may occasionally see the ships of our Australian squadron—not often enough—in Hobson's Bay; but you do not see the ships in distant parts of the world which, and not these in Australian waters, are your real defence.

In a fine passage, Captain Mahan points out that the storm-beaten ships (the ships of Cornwallis, Collingwood, and Nelson), on which the eyes of the Grand Army never looked, stood between Napoleon and the dominion of the world. That applies to Australia, and, even if war came, you would never see the ships which would guard that huge investment in the sea which represents your most vital interest. I ask you, therefore, to keep in mind the outlines of naval history which I have attempted to trace, and, above all, to remember that that history is your own, that the deeds of the great seamen of the past are your heritage, and that, not the local squadron, but the tremendous power of the whole British Navy, stands ready to be employed in the defence of Australia, and of every portion of our Empire liable to over-sea attack.

The strategy of naval warfare remains unchanged and unchangeable. The decisive weapon, as in the days of Elizabeth, is the gun, and the personal qualities of the man who stands behind the gun have become more important in proportion to its enhanced destructive power. Tactics have been complicated by steam, because of the freedom and rapidity of movement which sails could not confer; but, here, also, the effect is to make greater demands upon the inherent qualities of the man, and I assert that the instincts and the aptitudes, which are the ancient inheritance of our race, have not decayed.

When we consider the other conditions of naval supremacy, surely it is clear that the balance has swung to our advantage. In the means of building, equipping, re-fitting, and repairing the modern war-ship, there is one country only which can hope to rival us, and I regard war with the kindred people of the United States as a crime that ought to be unthinkable. No other country can approach us in ship-building power, and, as a naval war in which we were involved would certainly not be a contest of days or weeks, this power must tell heavily in our favour. Coal is a vital need of the modern ship, and no probable enemy has his own supply of good steam coal, while dotted

over the world are our coaling stations and docks, which—in peace time—serve most conveniently for the use of foreigners.

Lastly, there is one great factor, which must not be forgotten. Every would-be invader of England, from William the Conqueror to Napoleon, has counted on finding allies on landing. There is now no British soil where an enemy could expect a welcome. And again, right through our history to the end of the eighteenth century, we have been almost continuously involved in internal dissensions. There have been long civil wars and bitter dynastic divisions. It was not a united England which triumphed over the might of Spain in 1588; it was an even less united England that successfully opposed Louis XIV. Scotland till the last half of the eighteenth century was no source of strength. Ireland was in active rebellion during the great war of the French Revolution, and both were frequently in open or secret alliance with France. Now Scotsmen are everywhere a source of strength, while Ireland has given us some of our greatest generals, and both have furnished fine regiments, which bear on their colours the names of battles fought for the Empire in every part of the world. With a population at home of 15,000,000, we opposed France with 25,000,000, and stemmed the tremendous forces generated by the French Revolution wielded by the genius of Napoleon. At a time when our young Colonies, except Canada, could bring no aid to our arms, we found ourselves confronted by all Europe, and our one steady ally was little Portugal. Now the British people number more than 52,000,000, and they are strongly established at the great points of vantage of the world, while the citizens of the Empire number 390,000,000, and include the finest fighting men of the coloured races.

Our advantages are immense; our resources are unrivalled; we have recently shown that we are united in the determination to uphold our honour and our rights. But now, more than ever, the primary condition of our existence as an Empire, of our territorial security, and of the peace which is necessary for our onward progress, is that we should be prepared to hold what Thucydides more than 2,000 years ago described as the "mighty dominion" of the sea.

OBSERVATIONS ON THE WAR IN SOUTH AFRICA.

AN ADDRESS DELIVERED BEFORE THE DUTCH SOCIETY FOR THE
ADVANCE OF MILITARY SCIENCE (VEREENIGING TER BEOEFENING VAN
DE KRIJGSWETENSCHAP).

*By Captain Jonkheer J. H. RAM,
Military Attaché with the Boer Forces under General Botha.*

Translated from the Dutch, by permission of the Author, and of the
Society, by F. S. ARNOLD, B.A., M.B. (Oxon.).

Continued from December JOURNAL, p. 1399.

A STILL more startling proof is afforded by the battle of Colenso, which took place six days later.

General Botha, in command of the Transvaal troops, and General Cronje in command of the Free Staters, held the lower and upper Tugela respectively, their object being to dispute the passage of the river by the English columns advancing to the relief of Ladysmith. The English general based his plan of attack on most imperfect information concerning his opponent. It was firmly believed in the English camp that the Boers were afraid to occupy positions on the level, and therefore that only the kopjes near the railway bridge, and the heights which stretched in a wide curve north of the lower Tugela were occupied. It was assumed that Bridle Drift, which lies about $5\frac{1}{2}$ miles above Colenso, was unguarded. General Buller's plan was to send a brigade (Hart's Brigade) across this drift, and to attack with this brigade the Boer right wing north of Colenso, while Hildyard's Brigade should make a simultaneous attack on it in front. On Hlangwana Hill, which terminated the Boer position to the east, but which was separated from the main position by the Tugela, which bends to the north, about 1,000 cavalry under Lord Dundonald were to make an attack. Two brigades were to follow the right and left wings as reserves.

We have already stated that General Buller acted here on erroneous information. The results very soon made themselves apparent. It is strange that in the plan of action so little attention was given to Hlangwana Hill, which, from its situation, might be called the key of the Boer positions, as later events indeed proved. The main attack took place in the centre and on the left wing, though in both

places the Tugela lay between the attacking and defending forces, and thus materially strengthened the latter's position. Hlangwana, on the other hand, lay on the south bank of the Tugela, and was thus easier to get at.

It is possible and indeed probable that the general held the mistaken opinion that the bombardment of the previous days had caused the evacuation of the Colenso positions, or that they would soon be evacuated by their demoralised occupants, so that a vigorous advance was all that was necessary to put the defenders to flight.

The two days' bombardment which preceded the attack had, on the first day, a very marked moral effect, though it did practically no damage. The lyddite shell fire from the naval guns led the force on Hlangwana to abandon its position. The fear of lyddite, of which, as will be remembered, so many marvellous things were expected before the war, was here a powerful contributing factor. The Boers felt themselves no longer secure on the south bank.

The next day the bombardment was repeated with still greater vigour. The Boers had, however, learnt by experience how little damage even lyddite shells do to a force which has good cover, and the prestige of lyddite suffered a severe shock. Only later, when a few accurately placed lyddite shells had caused very great destruction, did the old respect for this explosive revive.

On the evening of the 14th Hlangwana was re-occupied, so that when the English attack took place on the 15th, the hill was in the possession of the defenders.

Near the village of Colenso, the Boers had occupied, on the 13th December, the kopjes north of the Tugela, and General Botha had further induced them to dig trenches in the level ground on the north bank of the river. The whole Tugela position extended from Hlangwana to Spion Kop, forming a serpentine line of about 25 miles.

The total Boer strength cannot be given with absolute accuracy. I believe that it amounted to about 5,000, less rather than more. The portion of the position which was attacked, stretching from Hlangwana to Bridle Drift, was 7 miles long, and was defended by about 2,500 burghers, of whom 1,000 were on Hlangwana, so that the real attack was repulsed by 1,500 riflemen, spread over a line $5\frac{1}{2}$ miles in length. Their positions naturally grouped themselves round the river crossings, but as there were other crossings besides the Colenso bridge and Bridle Drift, the defenders had to entrench themselves at various points along this line of $5\frac{1}{2}$ miles. The river is about 100 yards wide, and when low is fordable in many places, when full, however, only at the drifts. On the 15th December the water seems to have been fairly high.

The Boers had, in this action, two Creusot field guns of 7.5-cm. calibre, one 7.5-cm. Krupp gun, one 12-cm. howitzer, one pom-pom, and two machine guns. Besides the French cannon, which had the longest range, and were therefore placed on the high kopjes far behind the position, the guns near Colenso were on the kopjes near the bridge, a few hundred yards in rear of the position. Only the Creusot guns took part for a short time in the artillery duel, the remaining pieces acted merely as infantry ordnance.

The attacking force had 14 naval guns and 5 batteries of field artillery, 44 guns, in all.

This great disproportion was more or less neutralised by two circumstances favourable to the Boers. In the first place, the defenders'

guns moved from one position to another during the night preceding the action, in consequence of a desertion which took place on the Boer side. This lucky thought of General Botha had the desired effect; throughout the 15th a vigorous fire was kept up on the kopje where the Boer guns had been up to the previous day. In consequence of this, the Boers were able to reap the full advantage of the invisibility of their artillery, which was, of course, an invaluable protection against the enemy's fire.

All the English pieces took part in the action, though some of them only for a very short time.

The English troops marched out of camp before daybreak, and a bombardment was commenced with the naval guns at dawn. The infantry, however, did not come into action until 8 a.m.

The total strength of the attacking force was, according to the report of the American attaché, Captain Slocum, 17,000 men. They advanced in the division of columns already given, against the Boer positions. Hart's Brigade went astray on the left, at any rate it did not reach Bridle Drift, but blundered into a bend of the Tugela, where fire was opened on it from the trenches in the flat ground. This fire caused the troops, which were still partially in close formation, heavy losses. This brigade was practically put out of action in the first few minutes of the engagement. Its losses amounted to no more than about 12 per cent. A great part of this loss, however, was sustained during its retreat, so that we may conclude that its power of attack was broken after it had sustained a loss of 8 per cent. That, as a matter of fact, all fighting value, and thus all impetus of attack, was lost to the brigade very soon after it made its first acquaintance with the Mauser bullet, may be concluded from the fact that, in the retreat, 50 soldiers were left behind who did not venture to leave cover, and who were later captured by the Boers who waded across the Tugela about mid-day.

In the centre, Colonel Long had galloped on in front of the infantry with two batteries of field artillery, and had unlimbered at a distance of about 900 yards from the enemy's position. He had thus brought himself under a fire opened on him by the Boers with rifle, machine guns, pom-poms and artillery. In a very short time the horses and many of the men were killed. The remainder took to flight and sheltered in a donga, some hundreds of yards from the battery.

The rest of the action in the centre simply resolved itself into an attempt to recover the abandoned guns. The splendid bravery of a few volunteers was rewarded by the recovery of two of the 12 pieces; further attempts failed. The infantry, consisting of battalions of the centre brigade, was not to be induced either to cover the recovery of the guns, or to attempt it themselves. This is a very striking proof of the extraordinary moral effect of the modern quick-firing rifle. The losses sustained by Hildyard's Brigade amounted to only 6 per cent., or, if one allows for a certain loss in retreating (and, according to some eye-witnesses, the losses then were heaviest), 3 to 4 per cent.

On the right wing the attempts to capture Hlangwana failed. Here also the impulse of attack exhausted itself after comparatively small loss.

The English loss amounted to 165 killed, 670 wounded, and 332 prisoners, a total, thus, of 835 hit; in itself a considerable number,

but yet, regard being had to the strength of the attacking force, an insignificant loss. Nevertheless, at the termination of the action the English had to leave 332 men behind, who had sought cover in holes and hollows about 500 yards in front of the Boer positions, to escape the enemy's destructive fire.

These actions, thus briefly summarised, prove, just as do later actions in this war, the great power the modern weapon gives to the defence. The attack is little or nothing advantaged by it. His increased rapidity and accuracy of fire is more than outweighed by the privilege, bestowed on the defender by smokeless powder, of remaining invisible, while the great distances the attacker has to traverse under the enemy's fire, exhaust his physical energy, and deprive him of the coolness and rest he needs, in order to do himself justice as a marksman.

A very striking feature of the action at Colenso, says Captain Slocum, was the total invisibility of the enemy; not a single Boer was to be seen from beginning to end of the battle. This statement is confirmed by numberless other witnesses. It is remarkable, too, that this action, in which 17,000 English took part, and which should thus have given the general at least as much information concerning his enemy as a reconnaissance in force, left him in entire uncertainty concerning his opponents' total strength. In General Buller's official report of this battle we read, *inter alia*:—

"We were engaged for eight hours with an enemy occupying commanding, selected, and carefully prepared positions—positions so carefully prepared that it was almost impossible for infantry to see what to aim at, and I think *the force opposed to us must altogether have equalled our own.*"

And further:—

"I am unable to give an estimate of the enemy's loss. They were extremely well concealed, but, judging from their fire in places, their trenches must have been very full of men, and our shell fire was constant and very accurate. Among the many conflicting accounts I have received, I incline to believe those, and they are the majority, which state that the enemy's losses were heavier than they had thought possible."

This is a vague expression, but an expression which, at any rate, points to expectations very wide of the truth. The Boer loss amounted, as a matter of fact, to 7 killed and 30 wounded.

If we now consider what is the chief characteristic common to the actions we have described, we can lay down the following:—

Alike in official reports, and in the descriptions of war correspondents and officers who took part in these actions, stress is laid on the fact that smokeless powder guarantees complete invisibility to the defence. Captured English soldiers have even stated that they first saw their enemy, when, on the raising of the white flag, the latter appeared from their trenches or other cover.

The attacking force, too, can only guess at the strength of its opponent. How wide their guesses may be of the truth is easily seen, if we bear in mind the following figures.

At Modder River, the Boer strength was 1,800, the English general's estimate of their strength 8,000. At Magersfontein, their real strength was 4,500, the guess, 16,000. At Colenso, General Buller was of opinion that he was facing a force equal to his own, as

a matter of fact, 17,000 men were here opposed to 2,500. These are striking figures, which give a vivid impression of the value of smokeless powder.

The Boer guns, generally worked independently of each other, were so well covered as to be invisible, but they betrayed their position by their flash. Bombardment of a piece, however, which cannot be distinguished from the surrounding ground, is a very difficult process, even when the flash is visible. The English batteries, in consequence, aimed, not so much at the gun, as at what they took to be its approximate situation. If their fire became dangerous for the Boer artillerist, he generally ceased firing, moved his gun, and started again from the new position.

The so-called pom-poms did not betray themselves, or did so very rarely, by any flash. Generally they were so placed that the enemy's battery could not reach them, while they devoted their attention, as a general rule, only to infantry in close order. The latter were in consequence forced to adopt extended formation, when still more than 2,000 yards from the enemy's position. It need hardly be said, that scouting and reconnaissance were extremely difficult, and gave little information of value, when actual battles led to such erroneous impressions concerning the enemy.

The ordinary methods of reconnaissance: cavalry sent on in advance and information obtained from the inhabitants (in this case Kaffirs), etc., threw but little light on the situation. Field telescopes and binoculars proved themselves indispensable aids to reconnaissance, and the Boers found them of the greatest service. Many of their officers were supplied with the splendid field glasses of Zeiss. During the action the English generally made use of the captive balloon as a post of observation. The bombardment of positions, sometimes for days before an attack was ventured on, generally gave little reliable information. The Boers, who suffered little from the fire from direct firing artillery, seldom replied to it.

It may be stated then broadly, that most of the English attacks were undertaken without much knowledge of the strength and positions of the enemy. Mr. Alfred Kinnear, a war correspondent who accompanied Lord Methuen's column in its advance, records in his work, "To Modder River with Lord Methuen," the remark of a colonel of the Guards, to the following effect:—"It appears to me we attack the enemy first and then find out his position."

As a rule the Boers chose positions behind the summits of ridges or on the slopes of kopjes. From there they could reach their horses, which were tethered at the foot of the ridge or kopje, in safety. They had a rooted aversion to taking up positions on the level, where, from the nature of the case, they had not their horses at hand. The latter, it must be borne in mind, were intended to take them not only into but out of action, if the latter seemed to be taking an unfavourable turn. From this way of looking at things arose the well-known Boer tactics—tactics which contributed largely to the success of the British attacks early in the war. When the Boer generals succeeded in inducing the burghers to take up positions on the level, the likelihood of a firm stand being made was enormously increased. The English, who were thoroughly well acquainted with the ordinary Boer tactics, were convinced that the burghers would never be induced to alter them. The result of this conviction was

the surprise at Magersfontein and Colenso, when the attacking force was received with fire from trenches dug in the level ground.

The extended positions which had to be occupied by small numbers, obliged the Boers to bring all their forces into their first line; as a general rule there was thus no question of reserve. During the progress of an action, also, there was no such thing as leadership. The latter could only make itself felt by preparation beforehand. Reinforcement during an action, of a weak spot, by transference of burghers from another part of the position, only rarely succeeded (Magersfontein). At Dalmanutha an order to that effect was fruitlessly given.

The formation for attack adopted by the English was, at first, that adopted in most European Armies. Experience, however, speedily led to an increase in the intervals between the men in the front ranks, and soon, also, the reserves within range of the enemy's rifles and artillery were extended. Riflemen spread out, as was found to be necessary, were not easily seen, even at short distances, owing to the colour of their uniform.

In the later actions the long lines of the attacking force followed each other at intervals of several hundred yards, and thus approached the defenders' position.

It is remarkable that the percentage of loss on the side of the attack is small as compared with that in the Franco-Prussian war. A loss of 25 per cent. is a rare exception, most attacks being brought to a stand long before such a proportion is reached. At Colenso the loss was about 10 per cent. As a general rule, it was less than this. The percentage loss of the whole British force is noticeably lower still.

It is naturally of interest to consider to what we are to attribute this.

Does the small percentage of loss the English were able to bear, point to any inferiority of *moral* in action?

In my opinion, not. I have never heard any but a high estimate of the courage of the British officer, or private soldier, from those who were in the best position to form an opinion. Captain Slocum, whom I have quoted above, speaks in very high terms of the British soldier. Among other things he says:—

"The disregard of the British officer and soldier of all corps of ordinary precautions for his own safety is astonishing. The infantry never make rushes in their attacks, but march erect and calmly forward. I have seen mounted men under a hot rifle fire at short range halted, waiting for orders to advance, sitting erect on their horses, a perfect target, while by lying on their horses' necks they would have had some protection, as I had. They have not the individuality and resources of our men, but for indomitable courage, uncomplaining fortitude, and implicit obedience, they are beyond criticism."

If, however, we conclude that the British soldier was, so far as *moral* goes, neither better nor worse than the French or German who fought in 1870-71, we must find some explanation of the much lower percentage losses which in this war sufficed to bring an attack to a standstill. The explanation stares one in the face: the moral factor, which is independent of the loss suffered, plays a far more important rôle with the new weapon than with the old. The most important factor is the absence of smoke, which confers invisibility

on the defender, while another very important one is the great rapidity of fire; lastly, increased range also has its effect.

We have endeavoured to collect information concerning the amount of ammunition expended by the Boers in the various actions. As a general rule, it was quite impossible to arrive even at an approximate estimate; just as the Boers were ignorant of the strength of their commandoes, so also were they ignorant both of the amount of ammunition at their disposal, and of the amount actually used.

Before the battle of Colenso we had some foundation for an estimate in information given us by General Botha's secretary. General Botha had given orders that each rifleman in the position should be supplied with 350 cartridges. During the action requests for more ammunition came in, so that we may conclude that some of the commandoes ran short. If, now, we assume that 2,500 men took part in the firing, a number which is certainly not an underestimate, and that the marksmen expended an average of 150 cartridges per man, it follows that about 375,000 cartridges were used.

It would be a mistake to argue from the small number of hits (835), of which some must be put down to the Boer artillery, that the Boers showed bad marksmanship in this action. Where, as was here the case in part of the field of action, an enemy is brought to a standstill 800 yards and more from the position he is attacking, it goes without saying that the chances of being hit are small. The shots, however, which did not find a mark, passed so close to the enemy as to prove a sufficient warning to him to advance no further. *A miss, so long as it is not far enough away from the man aimed at to pass unnoticed by him, is not to be considered a lost shot.*

The Boers soon realised this, and endeavoured, especially in the later actions, to keep the enemy at a distance by opening fire at long or middle ranges, and *keeping up a heavy fire*. This plan of frightening the enemy is an excellent one, if confined to the first portion of the task to be carried out, viz., bringing an attack to a standstill, and demoralising the enemy; the second portion, the crowning of the work, is the carrying out of a counter-attack, with or without a threat to the enemy's line of communications. The Boer consistently neglected this portion of their task, for a variety of reasons, which would require too much time to set out here. In consequence, they frequently *repulsed* an attack, but never *routed* the attacking force.

That the smokelessness of modern powder has a very profound influence on the *moral* of the combatants is a point that hardly needs insisting on. Imagine the impression produced by shots which come quite unexpectedly, and from a quarter which one cannot detect. With each step forward fresh shots, equally mysterious. The fire becomes heavier, one does not know the strength of the force hidden somewhere yonder. Is it, under the circumstances, advisable to continue the advance as hitherto, or shall the order be given to deploy, and so slowly, very slowly, make one's way forward? Shall one run the risk of a serious check, which will certainly be present, if not merely two or three snipers, but a large detachment, lie concealed behind yonder rocks and ridges and ant heaps?

Let me give an example, out of many, of the effect of the modern rifle. It was in the few days preceding the battle of Spion Kop; 15,000 men were to cross the Tugela at Trichardt's Drift in order to take the Boers in flank. In the early morning of 17th January, a

small patrol crossed the Tugela, but was soon brought to a stand by Mauser fire from a neighbouring wood. Two battalions of 1,600 men were sent in extended formation to the point in question, where a bridge was to be built, and a vigorous fire from several batteries was kept up on the position where the enemy was thought to be. Preparations were made, *in formâ*, for a crossing of the river in face of the enemy's fire. Suddenly, three horsemen were seen to leave the wood at full gallop, and the enemy's fire ceased. Three men had succeeded in delaying the bridge building for a considerable time.

I can call to mind another instance no less significant. The battle of Dalmanutha had gone badly for the Boers, and the enemy had broken through the centre of the 12-mile-long Boer position. A kopje occupied by 70 men of the Johannesburg Police was abandoned, after a heavy artillery fire had been kept up on it for three hours without cessation, and the English infantry, who had for so long been kept at bay by 70 brave men, occupied the position. The Boers now abandoned their whole position, and rode off in all haste to their laagers, in order to bring them into a position of safety. I was on a ridge about 1,600 yards behind the position abandoned by the Johannesburgers; a few hundred yards from me stood a Long Tom, which had taken some trifling part in the action. General Viljoen, who commanded, attached much importance to the saving of this gun from the hands of the English. The heavy price of ordnance, however, a siege gun of 15½ cm. calibre, had to be drawn by oxen, and its rate of progress—one has only to bear in mind the nature of the South African *terrain*—was, as may be imagined, a very slow one.

The enemy's cavalry, meanwhile, rode into the newly-abandoned position, and prepared for a pursuit. With great difficulty General Viljoen succeeded in inducing about 20 Boers to take up position on the ridge, behind which the Long Tom was, and when they opened fire on the approaching cavalry, the pursuit was incontinently abandoned. The storming of a position which had not been previously subjected to heavy artillery fire, had already caused the English too many unpleasant surprises.

Such incidents, which could readily be multiplied, bear witness to what I have spoken of as the *mysterious* quality of the modern rifle, and reinforce the lessons on this subject taught by the actions of Modder River, Magersfontein, and Colenso. They inspired me with the firm conviction that frontal attacks, at any rate on the kind of battle-fields South Africa presents to us, have no chance of success, unless carried out by enormously preponderating numbers, and supported by sustained and overwhelming artillery fire.

In the report of Captain Slocum I find an expression of Lord Kitchener's quoted, which is of much significance in this connection. It will be remembered that the English, on 18th February, 1900, at the command of the then Chief of Staff (Lord Kitchener), attempted to carry Cronje's position, on the Modder River at Paardeberg, by storm. The attacking force, which enormously outnumbered the defending, sustained considerable loss, 1,148 men being hit. Speaking of this action next day, Lord Kitchener said:—"If I had known yesterday, the 18th, what I know to-day, I would not have attacked the Boers in the river bed; it is impossible against that rifle" (the Mauser rifle).

Lord Roberts, who arrived on the scene on the 19th, did not venture to renew the attack, but confined himself to a vigorous

bombardment, and a daily closing in upon the enemy. On the 26th February, Cronje's laager was bombarded by 98 guns of different calibre, and a few pom-poms. During the night of the 26th, the Canadians approached to within 90 yards of the laager, and there entrenched themselves. Cronje then gave up the struggle, and surrendered.

It was the conviction that frontal attacks, unless under exceptional circumstances, are doomed to failure, that made Lord Roberts abandon all attempts to rush Boer positions, and adopt the plan of an immense extension of his line, with a view to outflanking his opponent.

As regards the defender, we consider that we are, in connection with the foregoing, justified in saying that his strength lies in *invisibility, marksmanship, and*—this goes without saying—*an abundant supply of ammunition.*

Invisibility is aided by a uniform devoid of any glittering points, and of such a colour as to merge itself readily in the surrounding ground.

In Africa, where, everywhere, and for the greater part of the year, there is one prevailing tint, the question of the most suitable colour for the uniform, was not a difficult one to solve. In our country, experiments must be made with a view to finding the tint which will contrast least with most *terrains*.

This question of uniform is of more especial interest for the attacking force.

That the marksmanship of the defender is a most important determining factor in the strength of a defensive position, is not a discovery we owe to this war. It is a truth older than gunpowder itself, which, however, has, in this war, gained fresh strength and force. What good marksmen can do against an enormously superior force, we see in Magersfontein, Colenso, and Paardeberg.

As with a small-bore rifle a man can hit his enemy at a much greater distance than formerly, more thorough training of the eye is required, not merely at aiming, but at the accurate estimation of distances. For the shorter ranges, owing to the flat trajectory of the modern rifle, correct estimation of distance, in the case of a moving enemy, is of less importance; not so, however, in the case of a kneeling or lying one.

The Boers were *virtuosi* in the estimation of distances, as compared with their opponents. The elder men, especially, who had known the time when game was superabundant in the land, possessed wonderful skill in this respect. Hunting had not only given them skill in the judging of distances, but had also accustomed them to change their sights with the movements of their mark. The English soldier often forgot this, as was observed more than once in the case of men killed within a few hundred yards of a position, whose sights were found set for the long range at which they had commenced firing. The Boers were naturally surprised at this fact, and it did a good deal to confirm them in their low opinion of their opponents' marksmanship.

Marksmanship takes a more important place now that the enormously increased efficiency of the rifle, as a shooting weapon, has lessened its value as a stabbing or clubbing weapon. The Boers used the rifle exclusively as a shooting weapon. They trusted entirely to the bullet, and never felt any need for the bayonet. We know of only one case where any such desire was felt, viz., after the night

attacks on Boer guns outside Ladysmith. Messages were then sent to Pretoria, asking for bayonets for the Mauser rifle, to be used by those guarding the guns at night. The score or so of bayonets sent, however, were not used, though for a short period some use was made of the shot guns sent at the same time.

Experience also taught them that their opponents' bayonets were not to be feared, so long as they were well supplied with ammunition.

In the *Militär-Wochenblatt* (1901) there is an article by a writer who says he bases his observations on more than twenty actions in which he took part. It is, of course, notorious that one has to exercise great caution in accepting conclusions drawn from the personal experiences of those who have taken part in a war as combatants. There are so many causes that may lead, in such a case, to a faulty reading of events. There is also a strong tendency to attach too general an importance to personal experiences, and thus to argue from the particular to the general. When, in addition, as was the case with the foreigners who fought in this war, sympathy or antipathy for one or other of the combatants, or the desire to place one's own country in a specially favourable light, or to magnify the importance of the rôle oneself has played, colours the views of the observer, we have still further causes tending to a faulty observation of events, while the conclusions drawn from those events are apt to be influenced by prejudices of various kinds.

This was, at any rate, the impression produced on me by much of the literature relating to this war. Where I had personal knowledge of the facts, I was often driven to the conclusion that the writer's powers of imagination far surpassed those of accurate observation. Even in the article I have mentioned, there are some statements which make one fear that the writer has given to isolated phenomena too general an application; at the same time, so far as scientific value is concerned, it is, in my opinion, quite among the best of the works produced by foreigners who have taken part in this war. I do not hesitate, then, to quote certain passages from the article, in confirmation of the view I have expressed above, that the modern rifle has made the rôle of bayonet, lance, and sword a very minor one indeed.

The author of the article states, in one passage, that the Boers soon entirely lost their fear for their opponents' lance and bayonet. In another passage, he relates how the Boers would often withdraw to 50 or 100 yards behind the crown of a ridge. When the English then showed themselves on the top of the ridge, celebrating their victory with loud cheers and cries of "Majuba!" they were often put to utter rout by the fire at close range of quite a trifling number of rifles.

This last example shows how thoroughly the Boers despised their enemy's bayonet, and how complete was the confidence they placed in the quick-firing magazine rifle. So far as we are aware, the occasions on which the English were able to use their bayonets were very few.

That musketry training should be directed, as its end and aim, to the production of the highest possible standard of individual marksmanship, seems to me an urgent necessity, for confidence in the rifle, which is naturally most developed in those who can make the best use of it, is the most powerful factor in the securing of a good fire discipline.

The very extended formation in which the defending force will in future occupy its positions—feeling safe in so occupying them, if they can use their rifles well—combined with the necessity the officers

will be under of remaining under cover, will practically prevent their exercising any direct influence over their riflemen during the action. The marksman in a defensive position, then, will be left almost entirely to himself, at most being able to consult his nearest neighbour concerning their course of action. The fire discipline depending upon obedience to the order or gesture of an officer, must give place to one based primarily on the confidence of the individual man in his rifle and his skill in using it, and secondarily on a training which shall have taught him how to use his supply of ammunition to the best advantage.

The Boers were forced by their enemy's overwhelming superiority in numbers to adopt a very thin occupation of their long defensive lines. Perhaps, had it not been for this sheer necessity, they would not have done so. Be that as it may, however, their method has taught us that the defender, thanks to the new rifle, can spread out his line till it is extremely thin, without any fear of the enemy's breaking through. It must, of course, be remembered that in the South African war there were two special conditions present which will not be met with—or, at any rate, not in the same degree—in a European war. In the first place, the fire zone of the defender was, as a general rule, open and level for some kilometres from the position; and, secondly, the Boers, the older men at any rate, possessed a skill in the use of the rifle superior to that of any European soldiers. I may remark here, however, that in this country (Holland) there are many positions which would give the defender a very open fire zone. We should have in many cases to be content with 800 yards of open ground, and in extended positions there would be portions which would not have even this much in front of them. In other parts of the country, however, the conditions are much more favourable for the defence, the *terrain* being so open, or so capable of being made open, that the qualities of the modern rifle could be utilised to the full.

Our private soldiers, even if we ever secure the desideratum of a training in marksmanship commenced in early youth, will never possess the skill in the use of the rifle with which the Boer came into the field. Side by side with many excellent marksmen, our Army will always contain a large number of incompetents with the rifle, of whom one cannot help asking whether it is worth while taking them into action as riflemen.

(To be continued.)

THE CHINESE ARMY.

By General H. N. FREY, late Commanding the French Peking Relief Force and the 1st Brigade of the French Expeditionary Force in China.

Translated by permission from the *Revue des Deux Mondes* of October, 1903.

This Article is one of a series from General Frey's new work, "*L'Armée Chinoise Ancienne, Nouvelle et dans l'Avenir*," which he has kindly given us permission to reproduce in the JOURNAL.

Continued from December JOURNAL, p. 1434, and concluded.

CHAPTER VIII.

THE question of China's choice of the Power, or Powers, to whom she will apply for the re-organisation of her Military Forces, is for various reasons a matter of undoubted International interest. Dazzled by the brilliant rôle played by the Japanese in the campaign of 1900, some of the Mandarins have been anxious to obtain the services of officers of that Army; and one of the viceroys, taking advantage of the independence which these high officials enjoy in their provinces, notably for the regulation of the question of military organisation, took the initiative in 1901 in requesting Japan to furnish him with instructors for his troops, and professors for his military schools. These Mandarins are thus of a mind to confide to the Japanese the military education of China.¹

They give various reasons in support of their view; the close relations resulting from the proximity of the two countries; the great ease with which the Chinese can read the Japanese characters, almost without any previous study, the Japanese using for their writing

¹ And one may also say their scientific education. For, as a matter of fact, in the beginning of 1902, while there were thirty young Chinese attached to the Japanese Military Schools, there were at the same time, five hundred studying at the University in Tokio. The expenses for the maintenance of these scholars are trifling; sixty francs a month per head being sufficient to provide them with comfortable quarters and good food. The Japanese, who as a rule are affable and polite to everyone, have a special regard for these Chinese. The number of the scholars should have been considerably increased the following year; but in consequence of a report which was sent to the Court of Peking, stating that on the return of the first contingent sent to Japan, the students had brought back with them ideas which could only be considered as revolutionary, an Imperial Edict appeared during the midsummer of 1902, forbidding the sending, for the future, of young men to study in the Japanese Universities.

Chinese characters to which they simply adjoin the phonetics; and lastly, the resemblance, or at least the great analogy, in the manners, the mode of living, and the costume of the two nations, the Japanese even adopting, when detached for service with the Chinese, their coiffeur, their clothes, and their mode of life, so that they are able to pass unrecognised by Europeans who are unaccustomed to distinguish the difference between races.

Other reformers, and by no means the least important of them, raise their voices in dissent. They declare that they have not forgotten the traditional hatred which from time immemorial has divided the Chinese and Japanese; that they will not lower themselves so far as to place themselves under the tutelage of a people whom they have always considered as vassals of their Empire, and whose military superiority is only due to quite accidental and ephemeral causes. They maintain in addition that it is not to those who have lately mastered the art of war that they should go and learn—that is to say, second-hand—the elements of that art, and, in general, the elements of Western science; but that it is to the same source, *i.e.*, to the schools of the Powers from whom the Japanese have learnt that they should address themselves.

We touch, we must admit it, in this part of our study, on more than one delicate point of the whole of the military, industrial, and commercial problems which make up the "Extreme Eastern Question." The question first presented itself on the very day that the Court of Peking let loose the movement against foreigners, the control of which slipped from its hands, and for a time, like a river bursting its banks, submerged it; a movement that has brought upon the Empire itself the greatest dangers; and will, for a long time to come, manifest itself by revolts and successive outbursts at various points in the country where the authority of the Central Government is not firmly established. If China were to break away from this policy, maimed, it may be, but with no loss of territory, nor in reality made poorer—because, one may say with truth that the resources of which she can dispose through her commerce and the exploitation of her soil are infinite—there would be no further question of that high-handed partition of the Empire, the benefits of which for their own countries some diplomatists are already discounting in advance, as if a nation of 400 millions of inhabitants could be cut up and, to employ the imagery of Teheng-Tchi-Tong, be absorbed like slices of melon; and as if the struggles for freedom of such a giant would allow the invaders for a long time to come, and then only at the cost of considerable sacrifices, to maintain and to exploit peaceably their conquest! ¹

¹ From the point of view of International interests, the policy of the dismemberment and partition of China was considered by the most eminent French politicians as likely to produce the most unfortunate results. "It is necessary to bring energetic pressure to bear on the Central Government," wrote M. Pierre Leroy-Beaulieu at a moment when the question was being agitated, if not in the Chancelleries, at least in the public Press of the Western Powers, "in such a way as to impress on it the conviction of the superiority of the forces of the West over its own; on the other hand, to reassure the Government as to our intentions in this matter, and to avoid weakening its authority and prestige in the provinces. The policy of dismemberment and partition would be the very worst solution to the question."—(*Revue des deux Mondes*, 1st November, 1900.)

But it may well be asked if the Powers have the right of contesting the liberty of China to have the preponderating if not exclusive voice in its own councils and in the work of re-organisation of its finances and of its military forces.

It seems to us only in accordance with the simple right of nations that China should be able to take her inspirations, her opinions, and her means of military instruction, in a word, to draw, in view of improvement, the elements of her reforms from the source which seems to her the most suitable to her taste, her purposes, and her interests; under the condition, be it understood, that she strictly observes the clauses of the treaties which she concluded, before the present state of affairs arose, with other Powers, and whatever obligations she has contracted towards them.

There can be no doubt that the Protectorate of China by one or two Powers, to the exclusion of the others, would constitute a grave danger to the peace of the world. But China has no intention of placing herself under a Protectorate! She is neither infirm, nor is she an invalid who needs to be led by the hand, nor again, an infant to whom it is necessary to give judicial counsel. She will be able, the time having arrived when she recognises to the full her own power, to find an alliance which will prove most conducive to her own interests, a very different matter, and one which would almost certainly be a guarantee of peace for all.

With regard to the best choice among the Powers, without pronouncing as yet the word Alliance, of that one, or of those to whom she might think it to her interest to confide the re-organisation of her Army—to speak of that which concerns us more particularly—the question here takes a more precise form, which obliges us to look closely into the aims of some of the countries concerned in the problem of the Far East.

France is in the front rank of those Powers who can claim the right to give China counsel which, if not entirely disinterested, is not the less safe and sincere, because the guarantee of her sincerity will reside, in default of other considerations, in the primordial interest of maintaining the integrity of the Celestial Empire, and in its pacification and its complete tranquillity, conditions which will insure to her the possibility of living on good terms with her neighbour of the Far East, of having quiet on her own frontiers, and of seeing the normal development of her commerce in the zone of her influence.

The past, moreover, is a better guarantee for the future than the warm protestations of sympathy which are only given as occasion needs. As a matter of fact, China has certainly not yet forgotten the services that France by her attitude at the end of the Chino-Japanese War, in concert with Russia and Germany, rendered to the Middle-Empire by arresting the march of the young and victorious Army which was making, at the expense of the Celestials, the trial of its new military organisation, and which dreamt of nothing less than being able to dictate its will at Peking, and insisting on a cession of territory permitting Japan to set foot on the Asiatic continent.

This attitude, it is true, has not met, even in France, with universal approbation. Some people consider that its consequences will be to alienate from our country the friendship of a nation which has shown brilliant military qualities, and has emulated worthily the Army from whom it learned the art of war. A nation which, according to these same people, would not be long in becoming the arbiter of the

destinies of the people in the Extreme East. But are not these critics the best witnesses of the value which France attaches to living on good neighbourly terms with China? The pacification of our Colony of Indo-China depends more on the state of these relations than on the military dispositions which we can make on our Chino-Tonquinese frontier for the repression of piracy; and as a matter of fact it is sufficient to remember that in recognition of the services we had rendered it, the Court of Peking gave in 1875 stringent instructions to the civil and military authorities of the adjacent districts to ours, directing them on their personal responsibility to co-operate with all the means in their power with ours, in the pacification of these territories, so that piracy might be put an end to on both sides of the frontier. The Court of Peking was admirably served in carrying out these orders by that same General Sou, who for fifteen years was Commander-in-Chief of the Chinese forces of Quang-Si, and who, according to report, has since been recalled in disgrace by the Court, on the charge of not having repressed the revolt which to-day is desolating the provinces of Yun-Nan and Quang-Si.¹

¹ This rising which is the subject of serious concern to the Government of Indo-China and the Court of Peking, is in the main to be attributed to the distress which is causing to-day an indescribable amount of suffering in the above-named provinces, and which is the result of two bad harvests in succession. People dying of hunger are readily disposed to resort to piracy in order to secure subsistence. This is the case with the greater number of these pirates, who generally excuse their participation in piracy by anti-dynastic sentiments.

On the other hand, when the harvests fail there is no payment of taxes possible. The treasures of these provinces, supported solely by local sources, are soon drained by this state of affairs, and in addition by the large sums which have had in recent years to be paid by way of indemnity to the concessionaire companies, who are carrying out the great works in Yun-Nan and Quang-Si. The viceroys thus find themselves unable to assure the payment of the troops on the frontiers. Under these conditions, it is not to be wondered at that some of the soldiers of these corps are deserting and going over in small bodies at a time—sometimes even with their arms and accoutrements—to increase these bands of robbers (or rebels).

General Sou succeeded, working in concert with Colonel Riou, during the last year in energetically repressing a rising on our frontier. But the situation soon grew worse, principally owing to the want of agreement between the commanders of the forces of the three adjoining provinces, Yun-Nan, Quang-Si, and Quei-Teheou, who, each acting independently of one another, mobilised successively their troops when the movement began to be troublesome to them, and contented themselves with driving the pirates into the adjoining provinces.

It is as well to remember that it is not far from these frontiers that the Taiping rebellion had its birth, which caused the ruin of a great number of Chinese cities, and the death of hundreds of thousands of the inhabitants. It is therefore necessary, both in our own interests and in that of the Celestial Empire, that peace should be promptly re-established in these regions, by the employment of measures of administrative order, along with those military measures which are necessary. In any case, if the

France has since then limited her ambition to asking the cession of a point permitting her to watch the channel that gives access to the gulf, which like a small inland sea washes the coast of our Indo-Chinese colony. It was, we may point out, a measure of prudence and security, in view of the possibility of attempts at occupation of this point by other Powers, also anxious, without having the same rights or the same interests as ourselves, to establish an advanced outpost in this part of the world. France, moreover, is desirous to solve pacifically all the difficulties which may present themselves in regard to this cession, notably by the delimitation of the small zone of territory which has been granted her by leaving to a high Chinese official, sent into those parts, the duty of carrying out this delimitation, and only herself taking the necessary precautions to see that the natives respect the decisions arrived at. Numberless were those persons who reproached the Governor-General of Indo-China for employing in these circumstances courteous methods, which they characterised as signs of weakness, whilst he ought, in their opinion, in view of the state of affairs at that time, to have employed force to compel the native officials to carry out his will. And in this remote province of Yun-Nan, where, on account of its situation relative to Tonquin, France enjoys the privilege of having direct access to the exclusion of all other Powers, what is to be our rôle? In 1900, and later, during a period of some months at least, the authorities of this province, greatly troubled by the emissaries of the Boxers, declared themselves unable to assure the security of our representative and our fellow-countrymen, and even offered to allow us to send to Mong-Tse French detachments in the form of Consular Guards, to assure their security; we need only have sent some of our gallant Indo-Chinese battalions in order to penetrate and occupy this territory. But territorial extension is not to the interest of our country, whether it is effected directly by force of arms, or by the employment of indirect methods from our Colony in Tonquin, at the expense of China; there remains, as Li Hung Chang, whose patriotism no one can doubt, himself pointed out in a conversation with the French and Russian Generals, the extension of our influence by pacific means over that territory which lies adjacent to our own, whose advancement and well-being will depend much upon the good relations which its inhabitants maintain with us as also by means of commerce and the development of the railways, for which our countrymen are providing the capital—the resources of this province being insufficient for this work—and finally, through the facilities that we shall be able to offer for diverting to Europe and China the diverse products of the soil. In return for all these advantages, our ambition is confined to asking for the same privileges that have been conceded to the Russians in Manchuria, namely, that as a guarantee of security for the large amount of capital which is being expended in various enterprises in the country

governors of these Chinese provinces are powerless to suppress the rebellion, it is urgent that they should appeal without delay for the co-operation of our troops, no matter how galling it may be to their pride, which is very sensitive in matters of this sort. France will eagerly seize this opportunity to give, without any *arrière-pensée*, a new testimony of her sympathy to the great nation, her neighbour, by co-operating with her troops on the other side of the frontier in the restoration of order. This duty accomplished, our troops would return without delay to Tonquin.

and the safety of our fellow-countrymen, certain points of the railway now under construction in the province should be placed under our guardianship, by agreement with the Chinese. So much at least should be confided to us.

It is legitimate to recall that during the last campaign in China, our generals and our diplomatists, in the councils which were held after the capture of the capital, set their faces steadily against the proposals which had for their object the destruction of the Imperial Palaces by way of reprisals, and showed a praiseworthy anxiety to set an example of clemency and of generosity towards the vanquished, and of sympathy towards the Chinese Government by their attitude, both towards those Regulars who placed themselves under our orders to fight the Boxers, and towards the inhabitants, whose villages they protected, sometimes even against our own Allies. Such a request was made by the principal authorities of the Province of Pao-Ting-Fou, who begged that the French military authorities would take upon themselves the protection of the villages in that part of the country against the Boxers, and against the exactions of which the inhabitants were on more than one occasion the object on the part of some of the International detachments. France thus set an example to the other Powers, and she will one day reap the benefit of this pacific interference if her sons—diplomatists, soldiers, merchants, or colonists—know how to use their opportunities,¹ and to display towards the Chinese, under all circumstances, that attitude of dignity, of tolerance, of respect for customs and traditions, and of disinterestedness, which is indispensable for inspiring confidence in this people, and for assuring them of the sympathies which will so materially tend towards the realisation of the patriotic views that we ought to pursue in these countries.

¹ We read in the report of a superior officer of Colonial infantry who, before even the signing of the Protocol putting an end to the war in China, received from the Government of that Power a very flattering honorary distinction in return for the good behaviour of his troops towards the authorities and people of the district where they were stationed:—“Towards the end of October, 1900, I was charged with my battalion, the 17th Colonial Regiment, to occupy Tehou-Tcheou and the tombs of Si-Ling. We passed all the winter there, and in all that region, which extends from the Red River to the Great Wall (140 kilometers=85 miles), we enjoyed the most perfect tranquillity, while round us the country at several points was in a very disturbed condition.

“Our receipt was very simple: Trained for the most part in the military territories of Tonquin or the Soudan, we installed ourselves and acted naturally without waiting for orders, as if we were in one of our own military districts. We brought the peasantry back to their homes; we executed some brigands; and we restored its normal life and peaceful times to the country.”—(Commandant Fonssagrives.)

Let us add that during the International occupation of Pechili some of our officers had the opportunity of showing to the natives and the Literati that their being soldiers did not prevent their possessing a culture of mind equal to that of the Chinese Mandarins themselves; and the esteem in which these officers were in consequence held by the high Chinese authorities was a testimony that these last had changed their views entirely as to the ignorance and incapacity of the French military Mandarins.

CHAPTER IX.

After France, or rather concurrently with her, what Power has greater interests than Russia in the maintenance of the integrity of China, and the prompt re-establishment of order over the whole extent of its territory? Has England? It is allowable to judge of the political projects of a nation, as one would the designs of an individual, from its past line of conduct. There is no doubt that England has an incentive for action, as she has dreamt for a long time of creating in the valley of the Yang-tse-Kiang, the most populous and the richest portion of the Celestial Empire, a sphere of exclusive political and commercial influence, while awaiting the moment when she will be able to claim it as an appanage of her Empire. She hopes to effect this by the prestige of the powerful fleet which she maintains in the Far East, by her numerous consuls and other diplomatic and commercial agents, whom she has established on the whole length of the banks of the river, and by the large number of light-draught gun-boats, which are continually patrolling it. The question of the integrity of the country having been solved in favour of China, England has been forced to give up her projects—at least for the time. But the thought which lies at the back of the head of every section of her politicians, in the front rank of whom stands Lord Charles Beresford, is certainly to confine Russia, by a China, reorganised and inspired by herself; and it is with this object in view that the Anglo-Japanese Alliance had its birth. England laughed, and quite rightly, we think, when the alliance was formed, at those who reproached her with deserting in these circumstances the cause of the Western races, and with thus committing a sort of treason against their interests, and finally with following a very short-sighted policy.

And what of Germany? In pursuance of its maritime and commercial activity, of which its world-policy is a consequence, Germany is on the look-out for territory in different seas able to give her at once bases for her fleets, depôts for her mercantile marine, outlets to receive her superfluous population, and a market for the products of her industries, of which there is to-day a superabundance in the mother country; and we know that she will submit to any sacrifices in order to realise her projects. This Power would certainly not have been found in opposition to those who demand the dismemberment of China. She has gained by substituting for the policy of the "open door," or that of the "spheres of influence," to each of which policies she has given her adhesion in succession, that of the direct exploitation without let or hindrance of one of the most populous and richest in minerals of the Chinese provinces, a part of which is already in her possession.

There is now left Japan, as we are only speaking now of those Powers who are in direct contact with the Eastern part of the Asiatic continent. Without imputing secret designs to those on whom rests the responsibility of the destinies of the Empire of the "Rising Sun," nor for one instant doubting its right to make its voice heard in the International councils which will have to settle all the questions of the Extreme East, it cannot be denied that Japan has need of a considerable territorial extension and of a colonial domain which will permit her Navy, her industries, and her commerce to find full scope for their activity; and will furnish her with fertile lands, under a favourable climate, where she will strive,

as Germany is so anxious to do, to plant her surplus population, which is to-day stifled within the narrow limits of some of the islands of the Land of the Rising Sun. Moreover, she requires an outlet for her products, so that she can procure the raw materials that her soil can now no longer furnish in sufficient quantities for her needs, and thus assist in procuring for the country the financial resources necessary for the maintenance of her Fleet and Army, and to meet the new expenses which will be the accompaniment of the development and improvements that her rulers still wish to introduce.

Japan is thus that one of the Powers which, above all on account of her proximity to China, the similarity of the manners and code of life of the inhabitants of the two countries, etc., would apparently benefit the most by the dismemberment of the Middle Kingdom. For where else can she find that extension of territory she so anxiously desires? Indo-China, Siam, the Philippines, which would all be suitable for her purpose, and from which she draws to-day the rice, which is an article of food of the first necessity for her people, are occupied by other Powers. Formosa constitutes for her a charge rather than a source of profit, and is neither a colony for agriculture nor industrial exploitation, such as she is seeking. Corea attracts her, but Russia is there on the watch to see the agreement kept, by which the neutrality of this kingdom is assured, forming as it does a buffer State between the two great Asiatic Powers on each side of the coasts of the Yellow Sea and the Sea of Japan.

There is, it is true, in Japan a young, enthusiastic party, impatient and discontented at not being able to profit by the superiority of their military forces over the other races of the Far East in order to set foot on the continent of Asia, in spite of the clauses of the Treaty of Simonosaki. There are members of this party who wish to assert, in a striking manner, the supremacy of the Empire of the Rising Sun, and who do not hesitate to declare that the time has come for showing the world that Japan is in a position to match herself against the Colossus of the North, or against any other Western Power which might attempt to oppose the realisation of her programme of territorial expansion or her other projects; and that it is urgent, in order to secure the success of the Japanese arms, to seize, without hesitation, the first occasion which may present itself to immediately engage in hostilities.

Fortunately there are other and wiser men, more clear-sighted and prudent, who, alive to the true interests of their country, are aware that a period of peace, free from external embarrassment, is indispensable if the steady progress in all that concerns the life of the people, science, industry, commerce, etc., in which Japan has already made such great and rapid advances, is to be continued. These people, who form a strong body of public opinion, are also fully aware that the Asiatic continent affords an ample field for industrial and commercial activity, and for the pacific exploitation of its resources by all Powers. Supported by her Army and Navy, which have already displayed their prowess, and thanks to her well-defended coasts and the efficient organisation of her reserves, the Land of the Rising Sun can, in perfect security, proceed on the path of self-development.

The Anglo-Japanese Alliance has not modified the general situation. It was in a certain measure foreseen, and has come about naturally owing to the conjoint interests of the two Powers. It is, however, only likely to be of a temporary nature, and in the near

future Japan will have no more dangerous rival in the economic region than England, excepting, perhaps, the United States. For the moment the alliance is useful for England, as tending to strengthen her influence at Peking, which has been somewhat on the wane; but whether it will assist her in forwarding her views on the Yang-tse Valley is doubtful. From the financial point of view, the alliance benefits Japan, as it strengthens her credit, without which she cannot carry through the complete reorganisation of her Navy and Army; but there is no reason for supposing that there is any promise on the part of her powerful ally to intervene by force of arms to assist in the many demands put forward by the war party in Japan. It is unlikely that England will join with Japan in launching an ultimatum at Russia for the immediate evacuation of Manchuria, at a time when order is far from having been established in that province. An even partial compliance with such a demand would be regarded as a sign of weakness through the whole East, and would gravely compromise the vital interests of the Russian Empire.

The Anglo-Japanese Alliance naturally leads to a grouping of other Powers, whose interests may be adversely affected by its conclusion. The accord between France and Russia, whose interests, both in the East and West, are closely bound together, re-establishes the equilibrium. France can view eventualities without apprehension. The sacrifices she has made to complete the organisation in Indo-China of her military forces and of her defence works; the ties of interest and sympathy which she has created between her administrators, her soldiers, her colonists, and the natives; the co-operation that she can expect from these last, in case of necessity, are guarantees that she can, with the support of her Northern ally, assure the safety of her possessions in Indo-China against any attacks from the sea. With regard to Russia, thanks to the tenacity which she has displayed in carrying through her vast railway enterprise, she is in the position, should necessity arise, of being able to concentrate troops and stores of all kinds in a few weeks, so that she can face any eventualities which time may bring forth; and she has become the real arbiter of events in that part of the Asiatic Continent.

An exceptional opportunity offers itself for China to associate her interests, both in the cause of peace and to assure her own safety in the future, with those of the Western nations. The entry of a new and strong China into the Franco-Russian Alliance, with her finances and her Army and Navy reorganised, largely open to the commerce of all nations, impressed with the importance of the rôle that her immense population and her infinite resources can enable her to play in the world, and by her situation forming the welding point between French Indo-China and Russian Asia, with which she will form an almost solid block, would be one of the most important events which could be accomplished with the dawn of the new century, when the whole world is anxiously praying for the triumph of civilisation and the advent of an era of concord and universal peace.

THE FRENCH NAVAL PROGRAMME OF 1900-1906.¹

*By M. de LANESSAN, Member of the Chamber of Deputies,
and late Minister of Marine.*

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Continued from December JOURNAL, p. 1417.

CHAPTER VII.

THE natural conclusion of the study we have been making is that every scientifically organised Navy must be composed of a more or less considerable number of units of each of the classes which we have been considering.

The ships of each of these classes fulfil certain specified duties, which cannot be so well performed by other vessels; so that, as the Minister of Marine justly remarked in his explanatory Note on the proposals for increasing the fleet, it is impossible to avoid a recognition of the principle that "the specialisation of men and means for certain distinctly marked rôles, which governs the march of progress in all branches of human knowledge, has become by its generalisation a veritable scientific law."

In spite of the praise lavished by some public men and writers on certain types of hybrid ships, which are to be capable of carrying out every duty, all Navies instinctively conform to this principle of specialisation, and all, after feeling their way, which is quite justified by the complicated nature of the problems to be solved, and where progress has been extremely rapid, have practically adopted the classification of the principal units of a fleet that we have indicated.

There is no important Navy which does not possess battle-ships, and which is not continuing to build them, in view of pitched battles and offensive or defensive operations in neighbouring seas. In all Navies the qualities which are most sought for in this class of ship are offensive power with adequate protection; and it may safely be asserted that these objects have not been attained in a battle-ship, if one or the other of these two qualities has been sacrificed in favour of some other which in this class of ship is not of primary importance. So also in all Navies one finds cruisers, that is, vessels in which high speed and an extensive radius of action predominate, because in contradistinction to battle-ships, they are intended for long drawn-out operations in distant seas, requiring smart and bold handling rather than great offensive power.

There is undoubtedly a tendency in battle-ships and cruisers to assimilate each other's qualities, more than existed formerly. This is notably the case in offensive power, since the introduction of numerous and powerful medium-sized Q.F. guns in battle-ships, which formerly

¹Le Programme Maritime de 1900-1906. Par J. L. de Lanessan, Député, Ancien Ministre de la Marine. 2nd Edition. Paris: 1903.

only carried a limited number of guns of a large calibre with a comparatively speaking slow rate of fire. Nevertheless, it is a grave error to attempt to arm cruisers with the same heavy guns as battle-ships, since the insufficiency of their protection rendering them incapable of fighting the latter, there is no need to weight them with these weapons, the only object of which is to pierce very thick armour. So also there has been a certain *rapprochement* between battle-ships and cruisers owing to the tendency which has grown up of increasing the speed of the former and adding to the armour of the latter, due to a belief that it is possible to join the qualities of the two classes in one ship, but all attempts in this direction have resulted in failure. Those Navies which have experimented in this direction have all regretted it, as the vessels built with this object are not in a position to run down fast cruisers, owing to insufficiency of speed, neither can they risk an action with real battle-ships, their protection being too weak. As up to the present we have avoided committing this error, the experience of others ought to encourage us to persist in this line of conduct and avoid the construction of these feeble hybrids.

Our duty, then, is to build battle-ships and cruisers, and instead of trying to assimilate them to each other, we must, on the other hand, give to each, as far as we possibly can, the primordial qualities of their respective classes. Instead of giving our fleet units which are to be capable of doing everything, and in reality are the very reverse, we must provide units as well organised as possible for the special rôle which our seamen assign to them; to our battle-ships the important offensive and defensive operations in European waters; to our armoured cruisers, the arduous work in the ocean and distant seas, in addition to the assistance they can render our battle squadrons in European waters. These two classes of ships characterise essentially two forms of the naval policy of France, which are represented sometimes as being distinct or opposed, but which in reality cannot be sacrificed the one to the other without peril, and in this connection I will say a few words on what has been called—the “distant seas” and the “European seas” policies.

By means of the first we defend our Colonial and commercial interests in different parts of the world; by means of the second we must strive to prevent any nation acquiring, to our detriment, the mastery of the seas which bathe our coasts. For the first we must construct armoured cruisers with as high a speed as can be given them, joined to a radius of action which will enable them to keep the sea for a considerable period without recoaling, and with an offensive power and protection, which will enable them to give battle successfully to any foreign ships of the same class as themselves, and also to destroy the weaker ones, of which our rivals dispose of so many. For these ships we must create in our most important Colonies, at Saigon, Diego Suarez, Dakar, bases sufficiently well organised to provide the means of making repairs, and of supplying provisions, ammunition, etc., and coal; in a word, a base at which our cruisers will be able to find a harbour of refuge, or a centre from which to act, according to circumstances.

For the second form of our naval policy, we must, as we have already laid stress on in these pages, construct the most powerful battle-ships that we can, brought as completely up to date as is possible at the time they are laid down, and from these ships our battle-squadrons must be organised. Both cruisers and battle-ships can be usefully

Classes of

Squadron

Of 14,86

13,00

12,00

11,00

10,00

9,00

8,00

Coast-Defe

Of 7,000

6,000

5,000

4,000

¹ After
displacing
exclusively
“Achéron”

assisted sometimes by torpedo-vessels and submarines, whose numbers must be proportioned, not to that of the large ships, as has been the case for a long time, but to the number and the nature of the operations assigned to them in time of war, whether to defend our coasts against the attacks of the enemy, or to menace his roadsteads and the vessels anchored in them.

These small vessels will be no less useful at our oversea bases as at home. In distant seas as in European waters, their action will be the same, their services will be identical, and in the one as in the other the more numerous they are the better. Finally, with the object of protecting our squadrons against the torpedo-vessels and submarines of the enemy, we must have destroyers sufficiently stoutly constructed to be able to accompany our battle-ships, sufficiently fast to be able to overhaul the enemy's, and sufficiently well armed to be able to destroy them. The number of the destroyers must be in proportion to our battle-ships, and sufficiently numerous to allow of every battle-ship being accompanied by at least one.

When the programme voted by the Chambers is completed, that is to say, at the end of 1906, our fleet will dispose of 28 battle-ships, 56 cruisers, of which 24 will be armoured, 72 destroyers, 50 of which will have a very high speed, and of not less than 200 torpedo-boats, and of a number of submarines, which will probably be not much under a hundred.

Classes of Ships and Displacement.	Anterior to the Programme of 1900.	Of the Programme of 1900.	Total, 1st January, 1907.	Names of the Ships.
<i>Squadron Battle-ships:—</i>				
Of 14,865 tons	—	6	6	République, Patrie, Démocratie, Liberté, Justice, Vérité.
13,000 to 14,000 tons	—	—	—	
12,000 to 13,000 „	5	—	5	Bouvet, Carnot, Formidable, Iéna, Suffren.
11,000 to 12,000 „	9	—	9	Charlemagne, Masséna, Charles Martel, Jauréguiberry, Brennus, Amiral-Baudin, Amiral-Duperré, Gaulois, Saint-Louis
10,000 to 11,000 „	6	—	6	Hoche, Magenta, Marceau, Neptune, Courbet, Dévastation.
9,000 to 10,000 „	1	—	1	Redoutable.
8,000 to 9,000 „	1	—	1	Henri IV.
	22	6	28	
<i>Coast-Defence Vessels.¹</i>				
Of 7,000 to 8,000 tons... ..	4	—	4	Caïman, Indomptable, Requin, Terrible.
6,000 to 7,000 „	5	—	5	Amiral-Tréhouard, Bouvines, Jemmapes, Valmy, Furieux.
5,000 to 6,000 „	3	—	3	Tonnant, Fulminant, Tonnerre.
4,000 to 5,000 „	2	—	2	Tempête, Vengeur.
	14	—	14	

¹ After the coast-defence vessels, there must be placed 8 armoured gun-boats, 4 first-class displacing 1,700 tons, and 4 second-class displacing 1,000 to 1,400 tons. These are vessels suitable exclusively for guarding the entrance to rivers. There are two of them at Saigon ("Styx" and "Achéron").

PROGRAMME—contd.

Classes of Ships and Displacement.	Anterior to the Programme of 1900.	Of the Programme of 1900.	Total, 1st January, 1907.	Names of the Ships.
<i>Armoured Cruisers.</i>				
Of 12,550 tons and 22 knots ...	—	5	5	Léon Gambetta, Jules Ferry, Victor Hugo, Jules Michelet, Ernest Renan.
11,000 to 12,000 tons and 23 knots	1	—	1	Jeanne d'Arc.
10,000 to 11,000 " 21 "	5	—	5	Gloire, Condé, Sully, Marseillaise, Aube.
9,000 to 10,000 " 21 "	3	—	3	Dupetit-Thouars, Gueydon, Montcalm.
8,000 to 9,000 " 18 "	1	—	1	D'Entrecasteaux.
7,000 to 8,000 " 21 "	3	—	3	Dupleix, Desaix, Kléber.
6,000 to 7,000 tons, less than 20 "	1	—	1	Dupuy-de-Lôme.
5,000 to 6,000 tons ...	1	—	1	Pothuan.
4,000 to 5,000 " ...	4	—	4	Latouché-Tréville, Chanzy, Amiral-Charner, Bruix.
	19	5	24	
<i>Protected Cruisers.</i>				
Of 8,000 to 9,000 tons and 23 knots...	2	—	2	Guichen, Chateau-Renault.
7,000 to 8,000 tons... (and 23 knots)	1	—	1	Tage.
5,000 to 6,000 tons (and 18 ")	1	—	1	Jurien de la Gravière.
	4	—	4	Cécille, Duquesne, Tourville, Foudre.
4,000 to 5,000 tons and 18 knots	8	—	8	Sfax, Alger, Isly, Jean-Bart, Descartes, Pascal, Catinat, d'Assas.
3,000 to 4,000 " 18 "	10	—	10	Duchayla, Cassard, Bugeaud, Chasseloup-Laubat, Friant, Dubourdieu, Duguay-Trouin, Davout, Suchet, Protet.
2,000 to 3,000 " 18 "	8	—	8	Linois, Galilée, Lavoisier, Surcouf, Lalande, Troude, d'Estrées, Infernet.
1,000 to 2,000 " 18 "	3	—	3	Cosmao, Coëtlogon, Forbin.
	37	—	37	
<i>Torpedo-Boat Destroyers.</i>				
Old and rather slow, of 900 to 1,700 tons ...	12	—	12	
Fast, of 300 to 315 tons ...	22	28	50	
Torpedo-avisos, old and rather slow	10	—	10	
	44	28	72	
Torpilleurs de haute mer, or first-class Submarines and submersibles ...	158	44 + ²¹ ₁	202 + ²¹ ₁	
	6	44 + ²¹ ₁	50 + ²¹ ₁	

¹ All the torpedo-boats, submarines and submersibles, the number of which is indicated above, will be completed in 1904. New units will be laid down in 1903, 1904, 1905, and 1906.

As auxiliaries to our battle-ships, we already possess 14 coast-defence vessels, all of which have quite recently been modernised, and should be able to give a good account of themselves, as they are well protected and have a powerful armament. The accompanying table shows the number of units of the different types of ship, which we shall possess in 1907.

With these ships the Navy ought to be able to organise satisfactorily not only the sea defence of our home coasts, with Algeria and Tunis, but also of those stations which we have to maintain in distant parts of the world for the defence of our Colonial and commercial interests; for this latter duty there are available a number of small vessels, avisos, gun-boats, etc., not given in the list above, although we should be wrong in terming them of "no fighting value," as some people do.

The expression, "a ship of no fighting value," is deceptive, since as a rule it is only relative. Take the case of certain gun-boats, which would be useless for fighting purposes in European waters, but are, nevertheless, of considerable value on distant stations where our rivals maintain similar vessels, being especially valuable for river work, and for service in places where only light-draught vessels can go. There are certain critics, of course, who hold that all these vessels should be replaced by others capable of doing real fighting work in any part of the world; but experience has shown this to be impossible. A case in point is the China station, where during the recent disturbances our gun-boats rendered invaluable services up the rivers, while our large cruisers were unable, owing to their size, to get to any of the places where their presence would have been most useful. Facts like these have been too often overlooked during the last fifteen years, with the result that should some of our special service small vessels come to grief we absolutely have no others with which to replace them.

CHAPTER VIII.

THE DISTRIBUTION OF THE UNITS OF OUR FLEET.

It remains now to settle what should be the distribution of the various ships that we shall have in 1907 in European waters, and those points abroad where we have interests to safeguard.

The policy of maintaining battle squadrons in both the Mediterranean and the Channel has sometimes met with much criticism. Nevertheless, it is a policy dictated by the geographical situation of the country, by the many and considerable interests that we have in both seas; and perhaps even in a greater degree by the policy followed by our naval rivals.

In the Mediterranean our fleet has not only to protect our home coasts, but also to ensure the safety of Corsica, Algeria and Tunis, not only against Spain, Italy, or Austria, which are our neighbours, and the Triple Alliance, but against Great Britain, which holds the extremely powerful bases of Malta and Gibraltar, and maintains very considerable naval forces in the Mediterranean. Nobody can therefore deny that the protection of our territories and our interests against such adversaries requires the constant presence in the Mediterranean of a very powerful battle fleet, and there are some among us who would like to see all our battle-ships concentrated in those waters. Those people, however, take an exaggerated view of the necessities of the case, and they

forget that battle squadrons are, before all and above all, the offensive weapon *par excellence* of every Navy. For however important the offensive operations may be to which we may be committed in the Mediterranean, they will not be the only ones which our Army and Navy ought to attempt in case of a maritime war.

If Italy or Spain were to be the sole objects of our offensive operations, the naval forces that we actually maintain in the Mediterranean would suffice to cover the disembarkation of an expeditionary force. Neither the one nor the other of these two Powers could protect itself effectually against our fleet unless they obtained the assistance of either England or the Triple Alliance.

Against England directly, in the Mediterranean we could do very little beyond an attack on Malta or Gibraltar, two places so well defended that they scarcely require the support of the English squadrons. It has been suggested that in case of a war with England operations could be directed against Egypt; but the probability is that any such attempt would provoke a hostile expression of opinion in Europe, which would be fatal to them. We could only venture on such operations against Egypt with any certainty of carrying them through in face of the opposition of Europe, by arrangement, with Germany. Could such an arrangement be made, and under what conditions, and at what price? The question is one of such importance that it cannot be left out of sight when the distribution of our squadrons is considered. To concentrate in the Mediterranean the whole of our armoured ships, to consequently give up the idea of any offensive operations whatever in the North, and to abandon to the enemy the entire command of the Channel, in view of carrying out an operation which might be stopped by Europe at the last moment, would simply permit England to concentrate in the Western Mediterranean the greater part of her naval forces, which would give her a very superior force to ours, and deprive us of any benefit from the concentration of our own squadrons in that sea.

However, the interests which we have to defend in the Mediterranean are so great that we must always maintain very strong squadrons there. Corsica, Algeria and Tunis must be protected against any attack by any naval Power whatever, and it will not be sufficient that these territories should be provided with troops and land or sea defences; it is imperative that no other nation should be able to dispute with us with any chance of success the command of the western basin of the Mediterranean; we cannot permit any Navy to have such a preponderance in that portion of the sea that we might have to fear the cutting of our communications with Corsica, Algeria, and Tunis. It is therefore necessary that our squadrons there should be strong enough to enable us to hold our own against the forces that England and Italy maintain in those waters.

In the North we have to assure the protection of our coasts against all attempts at landing by hostile forces, and to preserve as far as possible our naval and commercial ports against bombardments.

From the point of view of hostile landings, it is necessary to distinguish between the position of Great Britain and the Triple Alliance.

In a war with the first-named of these Powers, acting single-handed against us, no serious attempt at a landing on any point of

our coasts, it seems to us, is to be feared. The heads of our Army openly boast they would like to see the attempt made; but without going as far as that, one can say with them that the enemy would pay dearly for his success. However strong might be his expeditionary force, it could not possibly make head against our Army, which, entirely unhampered in its movements, could concentrate all its efforts against it.

In a war with the Triple Alliance, the situation will be different. Whilst Germany, Italy, and Austria would attack our land frontiers, nothing would be easier than for Germany to organise a landing on some predetermined point of our coast, if we abandoned the command of the North Sea, the Channel, and the Atlantic. But if we do away with our Northern Squadron, we are abandoning, without any doubt, this command of waters which it is necessary for us to maintain. Neither cruisers, nor torpedo-boats, nor submarines, will avail to prevent high speed mail steamers supported and protected by battle squadrons from landing troops on some point of the coast where the concentration of our land forces would be difficult—and all the world knows that there is no lack of such points on our coast.

Since Germany has become a naval Power, we must have in the North squadrons as strong as hers, as any action they may attempt will be supported by the efforts of her Army in the East, which it will take a large part of our land forces to keep in check. From the point of view of the offensive, we can do but little in the North against German territory, as the coasts are difficult of approach by large armoured ships, and are, moreover, strongly fortified; but we shall have to face the certainty of pitched battles in the Channel, North Sea, or Atlantic, either to repulse an attack directed against some point on our coast, or to prevent an attempt on the part of the German fleet to join hands in the Mediterranean with those of Italy and Austria.

Equally from the point of view of the offensive in a war with Great Britain, will our position in the North be of great importance.

In a war in which we shall be alone face to face with England, but where the Triple Alliance will observe a hostile neutrality towards any operations on our part against Egypt, an eventuality which we must keep in view, our interest will be to concentrate in the North and East strong forces able to take the offensive, while in the Mediterranean we ought to look to the protection of our coasts, including Algeria and Tunis, rather than attempt to take the offensive against the English possessions or fleet. It is in the North that we shall find the best means for utilising the enormous military superiority that we have over Great Britain, because it is on the coasts of the United Kingdom that a landing could be attempted with most hope of success. It is in the North that our armoured cruisers will be in the best position for working mischief on English commerce, either by the destruction of merchant-ships or by preventing their free movement. In the Northern seas no tactics could be more damaging to us than a pure defensive, especially against England. With the detestable weather which is so common in the Channel, our simply defensive ships, such as torpedo-boats and submarines, will often be unable to leave our harbours, while the English battle-ships and cruisers, being able to keep the sea, will bombard our commercial towns and harbours. It is then indispensable that we maintain in the North a powerful force, for it is in a single-handed war with England

that we shall be able to make the most effective use of this force, either by taking the offensive the moment war is declared, or by keeping the enemy's forces on the move until a decisive naval action had been fought in the Mediterranean. It is in the North that we must concentrate our best-armed, best-protected, and fastest cruisers, not only to lend a helping hand to our fighting squadrons, but because it is the most favourable position for running down weaker cruisers of the enemy and their destroyers, and for harrying their trade.

Lastly, it is in our Northern ports that we must distribute our best torpedo-boats, and submarines and submersibles with the greatest radius of action; and although, in view of the strong currents and frequent gales they may be considerably hampered in carrying out their work, yet nevertheless the results ought to bear good fruit, as the difficulties attending the navigation of large ships in those waters entail a good deal more than the usual amount of attention on the part of those in charge, and that circumstance should give our small vessels their opportunity.

Brest and Cherbourg in the Channel should be put in a proper state of organisation for receiving and repairing the battle-ship squadrons or divisions; Lorient and Rochefort on the Atlantic, not to speak of Brest, are admirably placed for becoming central bases from which our cruisers can act. Other ports, which need not be named, ought to be centres for large flotillas of torpedo-boats and submarines, always ready to hurl themselves across the path of hostile squadrons, to harass them, and to render as difficult as possible the blockade of our large naval ports.

In the Mediterranean, in case of war with Great Britain alone, it will doubtless be impossible to avoid fighting, because it is in that sea that the English Admiralty maintain the most powerful of their battle squadrons. The plan of operations which will be adopted by the English fleet is known to us in advance. Its first care would be to blockade our battle squadrons in Toulon, then to keep the Mediterranean free for the transport of troops, which would be directed towards some point in Corsica, Algeria, or Tunis. No one is ignorant of the fact that at the time of the quarrel over Fashoda, a powerful English squadron lay off Gibraltar with the object of preventing our Northern Squadron entering the Mediterranean, while another powerful squadron was held in readiness to blockade Toulon. Being thus assured of the command of the Western basin of the Mediterranean, the English would have been in a position to transport the eighteen thousand men that were concentrated at Malta to any predetermined point. Some people thought that this point would have been the north end of Corsica; others, Algeria or Bizerta, which at that time was almost defenceless. Whatever the real object of the operations might have been, there can be no doubt that it is in the Mediterranean that we shall have to fear the naval operations of Great Britain, because it is there that we are most vulnerable to her attack.

We have therefore to organise our forces in the Mediterranean with the view of meeting the tactics of the English Admiralty. It is necessary that our fleet in the Mediterranean should be strong enough to prevent its being condemned to remain blockaded in Toulon, and it is necessary that Toulon itself should be able to receive help from

outside. Such assistance could hardly come from the Channel or Atlantic, on account of the ease with which an English squadron could bar the Straits of Gibraltar, and it must therefore come from inside the Mediterranean, and it is with this object that the harbour and dockyard at Bizerta have been organised. We ought therefore to assemble at this impregnable base, as soon as we can, a sufficiently strong force, which will keep the enemy blockading Toulon on the *qui vive* for an attack from this quarter, and we shall thus oblige him to divide his forces in order to blockade both places at the same time. In order to maintain this double blockade, England will require many more battle-ships than she can dispose of in the Mediterranean, if we compel her to maintain a force in the Channel by ourselves maintaining a strong offensive force there.

It is pretty generally admitted that to blockade three battle-ships in a harbour, five of equal fighting value are required. If then we have in Toulon two squadrons of first-class battle-ships, that is, 12 ships, England, to maintain an effective blockade, will require 20; if at the same time we have at Bizerta a squadron of 6 battle-ships, England will require another 10 to blockade that port. In order, then, to become mistress of the Western Mediterranean by the blockade of our two ports, England will require 30 first-class battle-ships. It will not be easy to concentrate so large a number of ships; and they will offer to our torpedo-boats, submarines, and submersibles splendid opportunities for attack under the most favourable conditions of sea and weather it is possible to imagine.

If, then, we maintain in the Mediterranean three strong squadrons with a due proportion of destroyers, torpedo-boats, and submarines, divided between Toulon and Bizerta always ready, either to concentrate or divide between the two ports, as seems most desirable, England will never be able to boast of holding the command of the sea for a sufficiently long time to enable her to carry out offensive operations against either Corsica, Algeria, or Tunis, such as the English Admiralty propose to themselves to do.

We ought in the Mediterranean, as in the Channel, to multiply the centres of the *Défenses-Mobiles*. The mild weather, the grey horizons, and the heavy atmosphere which are so often found in that sea are most valuable auxiliaries for submarines and torpedo-boats. We ought always to have a large number of these craft at various points on the Corsican, Algerian, and Tunisian coasts, in addition to those for home defence, and the more numerous they are, the more useful auxiliaries will they be for our battle squadrons.

To sum up, whatever may be the eventuality we have to provide against, whether a war with the Triple Alliance, or one with Great Britain, it is self-evident it is absolutely necessary for France to maintain powerful squadrons, both in the North and the South. The objective alone changes even as the relative importance of the forces to be employed in one or the other sea, the tactics alone have to be modified according as we have to face one or other of these eventualities.

Speaking in a general manner, and without going here into details, we may be permitted to hold the view that our Naval Authorities are right in concentrating, as they have been doing for some time past, all our newest, most powerful, and fastest battle-ships in the Mediterranean, in order to have there a squadron of the first

fighting order, whilst concentrating all the best cruisers in the North.¹

In what concerns our foreign stations, it is useless to insist on the necessity of particularly developing that of the Far East and of the Pacific. They are the most distant from the mother country, and will be the most difficult to reinforce when war breaks out; but it is in the waters of the Far East on the one hand, and in East Africa on the other, that our most important Colonial and political interests lie. Consequently, it is Saigon and at Diego-Suarez which ought to be our best organised and most strongly defended naval bases. It is necessary that we have at both these points dockyards capable of re-victualling and repairing, if need be, not only the ships on those two stations, but also the divisions of cruisers, which we may be compelled to send into Eastern waters during a war with any one of the great Naval Powers.²

¹ By the Decree of the 1st April, 1902, the Minister of Marine completely reorganised the *Défenses-Mobiles* of France, Corsica, and North Africa, in such a way as to render our flotillas of torpedo-boats and submarines far more mobile and efficient. A Vice-Admiral, who is a Member of the Superior Council of the Navy, has been appointed permanent Inspector-General of the *Défenses-Mobiles*, which are now placed under the direct authority and responsibility of the Maritime Prefects.

² By a Decree of 1st April, 1902, the Minister of Marine has completely modified our naval forces in Far Eastern waters. The naval divisions of the Far East, the Pacific, and the Indian Ocean, whose fighting value was small, on account of the way they were dispersed, have been replaced by a mobile division of 12 large fast cruisers, destined to cruise together or in divisions, in Eastern waters. The squadron is under the command of a Vice-Admiral, with a Rear-Admiral as Second-in-Command. The Commander of the naval force in Eastern waters has, in addition, under his orders: 1. Twelve gun-boats and despatch-vessels, more particularly detailed for the direct protection of our interests, both in Chinese waters and in those of our Colonies in Indo-China, Madagascar, New Caledonia, etc.; 2. A division of armoured ships in reserve at Saigon; 3. The torpedo-boats, and later on the submarines, stationed at the different bases in Cochin-China and Madagascar.

Resting on Saigon on the one side and Diego Suarez on the other, which are thus joined across the Indian Ocean, this new naval force in the East will increase considerably the power of our flag in those parts of the world.

(To be continued.)

CAMPAIGNS AGAINST INDIA FROM THE WEST AND THROUGH AFGHÁNISTÁN.

Translated and condensed from the Russian of Major-General L. N. Soboleff, by Lieut.-Colonel W. E. GOWAN, Retired, Indian Army.

(Continued from July JOURNAL, p. 804.)

XXI.—CAMPAIGN OF NÁDIR, SHÁH OF PERSIA (FORMERLY KNOWN AS NÁDIR-KULI, THE TURKUMÁN).

INTRODUCTORY REMARKS.

IN order that we may present a clear picture of the invasion of India by Nádir-Sháh, an event which struck a fatal blow at the authority of the House of Timur, and thereby facilitated the subjugation of India by the English, it is necessary to review, although only in their general outlines, the causes which induced a *simple Turkumán raider*, who, in the early stages of his career, plundered caravans on the highway, to speedily become the arbiter of the destinies of the Far East.

The fortunes of history are inscrutable, and it is only to be explained by the concurrence of events that a man, who had received no sort of education, the son of a simple nomad, whose whole belongings amounted to what was in his felt tent and some head of cattle outside it, could, out of absolute nullity, become the monarch of the Persian Empire, could free that Empire from the heavy Afghán yoke, and thereafter appear on the scene as a great sovereign and a world-wide conqueror. And it is all the more surprising, seeing that he was an alien in the country which he, and he alone, raised from the very dust.

Persia, at one time a powerful monarchy, soon after the glorious reign of Abass the Great, sank into obscurity, and it became evident to the Persians themselves that the complete ruin of their country was rapidly setting in. Still Persia had preserved some outward form of splendour, for even towards the end of the 16th century, her neighbours regarded her with great respect and despatched to the Persian Court embassies equipped in the most lavish style. At that time the borders of this Asiatic monarchy were very wide, for both the Herát and Kandahár Provinces were comprised within the limits of the Persian Empire. Her neighbours were Turkey, Russia, and India, and also the independent Khánates of Khiva and Bukhára. But even then Russian diplomacy, which is distinguished for its quick-sightedness, had already divined that this once great Power was falling into decay. Here, for instance, is what Volinski, who was sent by Peter the Great to Persia, reported:—"It is difficult to believe that there could be over Persia such a head as the present one, one who is not only not above his

subjects but who is the subject of his own subjects, and I trust that such a fool is seldom to be found, even amongst simple folk, let alone crowned heads; for that reason he is not allowed to meddle with affairs of any kind, but is in all things dependent on his vice-regent, *Itmâd-ud-Daulat*, who, though more stupid than any ox, is still such a favourite of the Shâh that the latter does whatever he orders him to do. For this reason the title of 'Shâh' is not held in much esteem here. Indeed, all those, who were a little wiser than the Shâh himself, have been driven away, and there only remains this vice-regent about the person of the monarch, and he acts as he pleases. It would be almost impossible for one to be condemned to come across such a fool, and, though I have tried by every means in my power, by money, by friendship, by argument, I can do nothing with him. I have heard that they do not intend to have me here long, lest I should know too much about the condition of the Empire, but, indeed, were I to live here ten years longer, I could neither inquire about, nor see, more, for they do nothing. They are so lazy that they do not wish to talk of business for more than one hour at a time. Both their foreign and their domestic affairs are in utter disorder. They are so wanting in intelligence that anything, that is done, is done without deliberation. Hence they have so ruined their own State that I do not think even Alexander the Great, in his own time, could have more thoroughly devastated it by war. *I am of opinion that this Crown will pass into the last stage of ruin, if it is not revived by another Shâh*; for it could not be defended either from external foes or from rebels within the State, and, as it is, there are few places at which the standard of revolt has not already been raised. . . . With my weak understanding, I can think of nothing else than that it is the work of God, Who is causing this Crown to fall to the ground. . . . I think that in this matter the Will of God is working for the success of Your Imperial Majesty; and although our present war (the Swedish) might hinder us from the task, still I perceive such weakness here that, without incurring any danger at all, we could annex a large part of this Empire to Russia by means of a small body of troops, and that without much trouble. A more favourable opportunity than the present one there never will be, for if this State should at any future time be renewed by another Shâh, then the state of things might be altogether different. . . ."

The Shâh of Persia at this time was Hussain, and he ascended the throne in 1694 A.D. It is said that his predecessor, before his death, observed to those around him:—"If you wish to live in peace and quiet, then place Hussain-Mirza on the throne; but if you seek for a king severe but just, then make Abass-Mirza the Shâh." The all-powerful eunuchs selected the weak Hussain, who, because of his bigotry, was styled "Mullah," to be Shâh. And during his reign Persian affairs were administered by priests and eunuchs. The sovereign himself was perfectly satisfied with the voluptuous and luxurious life of the harem, in which two hundred of the most beautiful women were collected from all parts of the Empire. Perceiving the impotence of the Shâh, the governors of the several provinces plundered the inhabitants in the most pitiless manner and brought them to a state of desperation. This despair was, however, voiceless, as the bloodthirsty dynasty of *Sufi*¹ had succeeded in crushing amongst the populace any

¹ The late Sir Frederic Goldsmid transcribed this word "Safavi."—W.E.G.

boldness of mind much less of action. Now, terror, as we know, develops cowardice, and cowardice leads to baseness. The Persian people became cowards, and in return for the persecutions which they endured, they paid all their exactions to the Government of the Sháh with indifference and contempt, so that the fascination for the authority and title of the Sháh, which would otherwise have existed, altogether disappeared. Love, too, for the glory of their Fatherland also dried up. Suddenly a spark, which was to rapidly burst out into a flame that would destroy Persia, was kindled on the eastern frontier of the Empire to the complete surprise of the effete Government.

As we have already mentioned, the Kandahár Province at this period belonged to Persia. Not finding it possible to hold in check the warlike Afgháns by the so-called "troops," enrolled from amongst the oppressed and cowardly Persians, the Government of the Sháh sent as the ruler of the Kandahár Province a Georgian prince, who claimed for himself the title of George XI., and they gave to him the title of *Wali*.¹ This man, with his corps of Georgians, terribly oppressed the inhabitants of the province entrusted to his charge. Moved by the severe treatment of this Georgian band, Mir-Viáz, the chief of the Afghán tribe of Ghilzais, set out for Ispahán, in order to lodge a complaint at the Persian capital concerning the outrageous pillage of the Sháh's subjects, but when he arrived there he perceived that no sort of attention would be paid to his protestations. He therefore suddenly, and in great haste, set out for Mecca. Having thus fortified himself by a pilgrimage to the shrine at the tomb of Muhammad, he returned to Ispahán and began to attentively study the affairs of the Persian administration. The crafty Afghán quickly learnt that in point of fact no semblance of government worthy of the name existed at all in Persia, and that the very stability of the Persian Empire was based entirely on the will and pleasure of the provincial rulers. He then at once decided on severing his connection with Persia and on making himself the independent sovereign of Kandahár. After his arrival at this city he collected a band of his own adherents, and having attacked, defeated, and captured the Georgian governor, he put him to death. This was in the year 1709 A.D. The Persian Government then despatched the nephew of the murdered George XI., with a force composed of Georgians, Arabs, and Persians, against Mir-Viáz. This body, having arrived at Kandahár, proceeded to lay siege to the town, but, after an unsuccessful blockade of a year's duration, it was defeated in the open field by the forces of Mir-Viáz. The Persian Government thereupon sent fresh troops to subdue Mir-Viáz, but they advanced very slowly, and then the death of their commander destroyed the plan of the campaign which had been undertaken. Another body of troops was despatched with a like object, in the year 1715 A.D., but their onward march was soon arrested by an insurrection that broke out at Herát. In this province had been planted members of the powerful tribe of Afgháns known as "the Abdáli tribe." These people, seeing that their co-tribesmen of Kandahár had successfully freed themselves from the Persian rule, thought that they also would make themselves independent of the same Government. Abdáli, the chief of the Herát Afgháns, accordingly raised the standard of revolt, whereupon the Persian troops seized him and placed him in confinement. But to such

¹ Protector, guardian, or lord.—W.E.G.

a degree did the Persian inhabitants despise their own Government that they went over to the side of the Afgháns and drove the governor out of the city. Abdáli then escaped from prison. The Government of the Sháh thereupon sent a new Governor to Herát, but he had hardly come to the spot than he found himself besieged. The Afgháns then, with the aid of the inhabitants, entered the city and slaughtered the Persian garrison. Soon afterwards the Persians lost the four provinces of Herát, Ghurián, Murgháb, and Bádghis. The town of Farrah was also taken from them.

In order to quell the insurrection in the Herát Province fresh Imperial troops were sent under the command of a Turkumán leader; but the Afgháns, who were by this time well aware of the cowardice of the Persian troops, fell upon them and wiped them out. Meanwhile (1715 A.D.) Mir-Viáz had died, and Máhmúd, his son, then a lad of 17, had made himself ruler of the Kandahár Province. He was a sagacious and skilful youth, and he formed the design of strengthening his own position by taking advantage of the weak character of the Sháh. Notwithstanding therefore that the Kandahár Province had been for nearly eight years independent of the Persian authority, Máhmúd thought it a favourable opportunity to go and pay his respects to the Sháh, who was then at Kázvin, and he accordingly set out for that place. By his discreet and flattering speeches he charmed the Persian monarch and obtained the ear of his blind ministers. But in his heart he deeply despised them and held them in utter derision. By this time Zamán-Khán had established himself in the Herát Province. Thus the Persians had lost the whole of their eastern provinces. In the year 1716 A.D., the predatory Turkumáns round about Astrábád rose in rebellion and entered upon a series of plundering expeditions into the frontier provinces of the Persian Empire. At the same time a Lesghian insurrection broke out in Daghistán, and a disturbance occurred at Shirwán. The Lesghians then occupied Shemákha and killed the Persian governor of the city of Shirwán. After this they decided to place themselves under the authority of Turkey, and accordingly received a *Firmán*¹ of recognition from the Sultán.

Nor were affairs in any better condition in the central provinces of Persia, for Malik, the Governor of Tun, in the year 1719 A.D., raised the standard of revolt. Persian troops were sent to besiege this city, but Malik, who knew that their forces were inadequate for such a purpose, made a sortie with all his available men, and utterly discomfited the besiegers. In the year 1722 A.D. Mashad fell away from the authority of the Sháh. In a word, Persia was in a state of disintegration, and the forecast of the Russian diplomatist, Volinski, partook of the nature of a prophecy.

Máhmúd, the ruler of Kandahár, who had all this time been a keen student of Persian affairs, now meditated an unusually bold and daring plan of operations. He conceived the design of being satisfied with nothing less than the possession of the entire Persian monarchy. Under pretence of fidelity he inflicted a defeat on the Abdális, and then went in person to the Sháh to report to him the success of his arms, and addressed him as follows:—"Since this victory of mine is sufficient evidence of my devotion to your Majesty's throne, I ask that the Imperial troops may be sent into Khurásán from the other side so as to permit of my marching from Kandahár to Herát with the object

¹ Or patent.—W.E.G.

of attacking the Abdális from all points." The weak sovereign of Persia and his incapable ministers, without any suspicion of the crafty purposes of the Afghán, consented to this suggestion.

This was in the year 1719 A.D. Máhmúd, who, in the course of four years, had succeeded in collecting around him a body of troops devoted to his cause, then set out for Seistán. Kirmán was at this time being besieged by the Biluchis, and the inhabitants, who had lost all confidence in the weak administration of the Sháh, and who perceived no sort of issue from their desperate situation, sent messengers to Máhmúd and asked for his support. Máhmúd, who was elated at such a proposal, at once despatched a force to raise the siege and to occupy the city. After the lapse of nine months, hearing of the turn of events at Kandabár, he marched rapidly on that place. Here he devoted a whole year to firmly establishing his authority over his paternal inheritance, and when he saw that his object had been fully attained he again set out for Kirmán with a force of 8,000 men, composed of warlike races—Afgháns, Biluchis, and Hazáras. The gates of the city were closed against him, but he soon compelled the inhabitants to surrender. The Government of the Sháh had at last begun to understand the designs of Máhmúd, but it was too late, for the Afghán forces were now rapidly marching on the Persian capital.

This Afghán invasion, indeed, was quite unexpected. The Sháh's nobles in feverish haste began to put together an army composed of peasants and traders, who had no idea of warfare. Such a force had no sooner been armed than it had to be moved out to meet the enemy. On the 24th February, 1721 A.D., the two bodies met at Kelunábádi, one march out of Ispahán. The Persians were utterly routed and lost all their guns. The remains of this chaotic and defeated body of Persians then shut themselves up in the Persian capital, whereupon Máhmúd at once laid siege to it, and at the same time began to devastate the country round. This close blockade continued until October of the following year.

The siege of Ispahán constitutes a bloody page in the annals of military history. The Persian and Armenian inhabitants, shut up within the walls of this thickly populated and magnificent city, endured unheard-of privations. "The famine in the town," says a contemporary Armenian writer, "was so severe that a boy would cut off the breasts of his own dead sister and eat them, and many persons, having either roasted or boiled their own children, ate them." The besieged inhabitants also ate dogs, cats, old shoes, and even manure. The besieged Sháh entreated Máhmúd to withdraw, offering him a large ransom, the vast provinces of Khurasán and Kirmán, and his own daughter in marriage. But the ferocious Afghán remained deaf to such entreaties, and sent the Sháh the following answer to his offers:—"Thou offerest to give me 100,000 *tománs*¹ and certain territories. But seeing that they are already mine, thou art but offering to me my own money and my own provinces. Thou offerest to give me in marriage thine own daughter. But what should I do with thy daughter? Thy daughters and all thy children, I will hand over to my slaves. Thou hast not thought of any sensible idea. I will not withdraw from Ispahán." Meanwhile from no direction could the Sháh look for any assistance.

¹ A *tomán* was in those days equal to about 15½ dollars, or say from £2 10s. to £3.—W.E.G.

His eldest son, Tahmásp, who had succeeded in escaping from the beleaguered city, had met with no signs of Persian sympathy, to such a terrible state of degradation had the people of Persia fallen!

By the 12th October, 1722 A.D. the Sháh had left only three camels, and these he made over to the people, who were mad with the pangs of famine. With tears in his eyes he knelt down in prayer, and then, mounting his horse, he rode out to Máhmúd's camp. The Afgháns, on becoming aware of the approach of the Persian monarch, went out to meet him, and having done so, said:—"Máhmúd is asleep, wait awhile until he awakes." For quite half an hour the Sháh had to sit waiting upon his horse. At last he was conducted to the presence of Máhmúd. The customary salutations having been exchanged, Máhmúd, who had never risen from his seat, motioned the Sháh to a place below him. Taking the hint, the Sháh with his own hand removed from his head the royal turban band and handed it to *Itmád-ud-Daulat*, his chief minister, in order that he in turn might place it on the head of Máhmúd. The discrowned monarch then addressed Máhmúd thus:—"My son, on account of my sins, God no longer considers me worthy to possess my kingdom, and so He has made it over to thee. Here then is the chaplet from my head which I place on thine. May thy sovereignty be blessed." So fell the dynasty of the *Sufis*, which had ruled over Persia for more than two centuries.

In two days' time Máhmúd made his triumphal entry into the Persian capital. The city of Ispahán, which during the siege had lost through famine alone 100,000 inhabitants, presented the appearance of a vast grave-yard. Máhmúd, after assuming the title of Sháh of Persia, ordered money to be coined in his name, and the *Khutbah*, or "prayer for the reigning sovereign," to be recited in the mosques.

Tahmásp, on hearing of his father's incarceration, assumed the title of Sháh of Persia, whereupon a force of Afgháns was despatched, in November, 1722 A.D., to Kázvin with orders to seize him, but he managed to escape thence to Azerbiján. Although the inhabitants of Kázvin surrendered the town to the Afgháns without a struggle, afterwards being enraged at their violence, they fell upon them and killed every one that they found in the city. The Afghán troops occupying the forts and gardens around Kázvin, then withdrew to Ispahán. But as soon as Máhmúd heard of what had taken place he went in a rage to Kázvin and entered upon a series of executions, condemning to death some 114 persons; whether they were notable or obscure made no difference to him. Some months afterwards the Afgháns captured the town of Shiráz. With a view to firmly establishing himself on the throne of the Persian Empire, Máhmúd directed the strangulation of the children and other relatives of the dethroned Sháh, Hussain, to the number of 31 souls. The biers containing the bodies of these victims were then sent to Kum.

The position, however, which the young Afghán conqueror, Máhmúd, occupied was not a secure one. The triumphs which he had accomplished did not, in fact, correspond with his natural abilities, and so, as always happens in such cases, he perished. First of all he fell ill through the frenzy excited by his outbursts of wild ferocity, and was thus not in a condition to peaceably rule over the monarchy which he had founded. Then his more ambitious nephew, Ashraf, who was secretly rejoicing at his uncle's illness, and was anxiously looking for his death, could no longer contain himself and he gave orders for his

uncle's murder. Thus came it to pass that this Afghán conqueror of Persia was put to death on the 28th April, 1723 A.D.

Ashraf immediately caused himself to be crowned, and so Persia had at this time two claimants to the title of Sháh, viz., Ashraf and Tahmásp. The latter, as the lawful sovereign of the country, turned for assistance to the Russians, who had at this time established themselves on the south-western and southern coast-line of the Caspian Sea. No durable agreement, however, having been entered into between the two Governments, a state of war continued, during which the Russians obtained several victories over the Persians. The Turks, too, on their side, had made several conquests in the province of Azerbiján, and they had also despatched troops to Georgia and to the towns of Eriván and Tabriz. They had also occupied, from the side of Bághdád, the towns of Kirmánshah and Hamadán. They had moreover taken Kania and had laid siege to and occupied Ardebil, whence the troops of Tahmásp had withdrawn to Teherán. After this the Turks occupied in turn Mogána, Ranjián, Sultaniyah, and Gezaz. In fact, the situation of affairs in Persia was at this period a strange one in the highest degree, for whilst Tahmásp, who had possessed himself of the north-western provinces of Persia, was encountering both Russian and Turkish troops, Ashraf, who had not yet established his authority, was endeavouring, from his side, to weaken the position of Tahmásp. Soon, however, Ashraf's forces made their way to Teherán, and having inflicted a defeat on those of Tahmásp, compelled the latter to fly to Astrábád. After this the Afgháns occupied in turn Kázvin, Teherán, Sauk, and Kum, and the independent territory of Bandar and Yezd.

Having got rid of Tahmásp, Ashraf turned his attention to the overthrow of the Turks, the latter having declared that the object which they had in view was the expulsion of the Afgháns from Persia, and the restoration of that country to its lawful sovereign. At this time an envoy was sent to Ashraf by the Turkish commander-in-chief roughly demanding the withdrawal of the Afgháns from the country, and the restoration to the Persian throne of Hussain, who was a captive in their hands. To this demand, Ashraf replied by ordering the deposed Sháh to be slain, and his head to be sent to the Turkish envoy. The enraged Turks thereupon advanced with a numerous army, and the Afgháns went forth to meet them. An engagement took place near Shahr Kard, and the Turks suffered a severe defeat; but by the treaty of peace which was afterwards arranged, they were allowed to retain a part of the territory which they had already conquered. The Sultán of Turkey then ratified the treaty, and recognised Ashraf as Sháh of Persia.

The star of this capable Afghán was shining brightly, and he meditated on the pacification of his new sovereignty and on the establishment of his authority over it. But these hopes were not destined to be well founded. Persia, indeed, weary of the horrors of war, and ready to acknowledge the administrative and military capacity which Ashraf had already displayed, was prepared to submit herself entirely to him. And, on the other hand, the new sovereign of the Empire had at his disposal excellent material wherewith to set up a monarchy. And certainly Oriental history has ever taught us that at the precise time when, by the force of any specially concomitant circumstances, or by the working of any internal inspiration, the Afgháns have displayed an unusual daring, they have attained to terrible successes, and have

built up in a very short time a powerful Empire. Amongst this savage race is to be found a certain latent force, which is capable of accomplishing surprising exploits. And the suddenness of such exploits has ever astonished the East. We call to mind the Afghán, Máhmúd of Ghazni, who subdued the richest provinces of Hindustán, and compelled ten millions of Hindus to forsake the faith of their forefathers and to embrace *Islám*. Muhammad, of Ghuri, did very much the same thing. The Afgháns, too, who had occupied considerable portions of territory along the course of the Indus and Ganges Rivers, maintained their supremacy over such acquisitions during nearly eight centuries. Finally, the events, which we are now describing, afford a fresh testimony to the enigmatical power of this wonderful race. One tribe of Afgháns alone, the Ghilzais, from being for several years mere slaves of the Persians, became their conquerors. And at the precise time of which we are now writing, these same Afgháns were displaying such power of spirit that Ashraf, who knew his fellow-tribesmen well, had certainly ample grounds for supposing that he too would succeed in bringing what he had in hand to the same conclusion. And in all probability he would have attained his object if to the north of Persia, on the borders of the dreaded Turkumán Steppes, there had not appeared one of fortune's favourites in the shape of a man gifted with such unquestionable genius as to cause him to rapidly eclipse all others in renown.

We refer to Nádir-Sháh, the last great Asiatic conqueror, who was destined to bring the whole world into a state of perplexity because of the unusual magnitude of his exploits.

The Mussulmán peoples of the countries bordering on Persia looked upon this man as a phenomenon, sent, with orders from on High, for the punishment of sovereigns and peoples who were plunged in the gloom of ignorance, pillage, brigandage, and other such offences. Persia herself, prostrated by the rapacious administration of the *Sufi* dynasty, and crushed under the blows of the Afghán successes over them, regarded him as a saviour who had appeared under the decree of destiny. Contemporaries spoke of him with trepidation, for they saw in him some unusual manifestation which was quite out of keeping with the historical life of the East. And then again this strange personage, who had suddenly appeared in the midst of the Turkumáns (known only to men as raiders and robbers), by the power of his unusual endowments, his surprising activity, his firmness of purpose, his unshaken courage, his iron will, seemed to be gifted with the power of transforming the political configuration of Persia, Afghánistán, Turkistán, and India, and of exercising a decisive influence over the affairs of the still powerful Empire of Turkey. He therefore became all at once the subject of conversation throughout the entire East, and his glorious name, too. *Nádir-Kuli*, "The Slave of the All-Wonderful,"¹ was so wrapt in mystery, that, in a short space of time, it was the subject of inquiry of each man of his neighbour. Contemporaries, therefore, being alarmed at the apparent omnipotence of this previously unheard-of man, naturally put these questions to each other, "Whence is he?" and "What are his ultimate objects?"

¹ One of the attributes of the Deity, as acknowledged by all Muhammadans.—W.E.G.

Asia has, from time to time, produced great Army leaders, but almost all of them have been of Royal birth, and nearly all of them have acquired their power in the midst of the races subject to them. Such were Chingiz-Khán and Timur—both of whom were borne along as by a hurricane, the first from China to the Crimea and India, the second from Samarkand to the Volga, the Ganges, the Don, and as far as Syria. The great Bábar was the descendant of both these conquerors; but who was this Nádir-Kuli? He preferred not to speak of himself as sprung from any such unusual origin, but rather of his mode of life before he became famous in history. When Muhammad-Sháh, the defeated Emperor of India, offered a princess of the blood royal in marriage to his conqueror's second son, he requested that the young man should assume the names of seven of his ancestors from whom he could trace his descent in the direct line. And, on this ill-judged request being repeated to Nádir-Sháh, he angrily exclaimed: "Tell him that he (*Nasr-Ullah*) is the son of *Nádir-Sháh*, who is the son and the grandson of his own sword, and that he can claim descent not from seven but from seventy ancestors."

* * * * *

(To be continued.)

NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Captains—F. St. G. Rich to "Diadem"; C. E. Kingsmill to "Scylla"; E. F. B. Charlton to "Warrior"; H. L. Heath to "Vulcan"; C. F. Thursby to "Impregnable," as flag-captain to Commander-in-Chief, Plymouth; S. H. Carden to "Victorious"; H. Evan-Thomas to "Cæsar"; H. W. Savory to "Latona" and then to "Pallas"; C. L. Napier to "Euryalus"; F. G. Kirby to "Leviathan"; Hon. W. G. Stopford to "Glory"; W. B. Fisher, C.B., to "Cornwallis." Commander—R. E. R. Benson to "Calliope."

Vice-Admiral H. L. Pearson hoisted his flag on the 1st inst. at Sheerness, in succession to Admiral Sir A. H. Markham, as Commander-in-Chief. The first-class battle-ship "Repulse" arrived at Plymouth on the 10th ult. from the Mediterranean, and is paying off at Chatham. The third-class cruiser "Pioneer," from the Mediterranean, paid off at Chatham on the 4th ult., recommissioned for the same station on the 5th ult., leaving the same day for her station; she will undergo repairs and refit at Malta. The second-class cruiser "Furious" commissioned at Chatham for the Mediterranean, and left for her station on the 16th ult., where she relieves a sister-ship, the "Gladiator." The new first-class armoured cruiser "King Alfred" commissioned on the 22nd ult. at Portsmouth, to convey a new crew to Hong Kong for the first-class battle-ship "Glory," which recommissions at that port as flag-ship of Vice-Admiral Sir G. Noel, K.C.B., K.C.M.G., the new Commander-in-Chief on that station, and she left on the 1st inst. for Hong Kong. The "Majestic" and "Magnificent" are to be relieved by the "Cæsar" and "Victorious" respectively, as the flag-ships of the Commander-in-Chief of the Channel Fleet, and of the Second-in-command; both ships will pay off on 1st February. The new first-class armoured cruiser "Euryalus" commissioned at Devonport on the 5th inst. for Australia, where she relieves the first-class protected cruiser "Royal Arthur" as flag-ship.

Prize Firing in the Channel Fleet.—The complete scores made by the ships of the Channel Fleet during the prize firing at Gibraltar last month have been compiled, and they show a considerable improvement on all previous competitions. Only five out of the six battle-ships fired, the

"Prince George" having been sent home to repair the damage she sustained in collision.

The most rapid firing, as well as the most rapid hitting, was made by the "Majestic," but the highest percentage of hits to rounds fired was accorded the "Hannibal," whose 12-inch guns made 16 hits for 27 rounds, and her 6-inch guns 68 hits for 112 rounds, giving her a percentage of 60·4. The "Majestic's" 12-inch guns made 24 hits for 37 rounds, and her 6-inch guns 88 for 154 rounds, or a percentage of 58·6 of hits to rounds fired. The "Magnificent's" 12-inch guns for 30 rounds made 16 hits, and her 6-inch guns for 112 rounds 50 hits, giving a percentage of 46·5. The "Jupiter's" 12-inch guns made 11 hits for 32 rounds, and her 6-inch guns 59 for 125 rounds, showing a percentage of 44·6. The 12-inch guns of the "Mars" fired 31 rounds for 16 hits, and the 6-inch guns 146 rounds for 63 hits, giving a percentage of 44·2. The eleven 6-inch guns of the "Doris," cruiser, made 45 hits for 116 rounds, or a percentage of 40. The eight 4-inch guns of the "Prometheus," cruiser, fired 87 round for 31 hits, or a percentage of hits of 35·6. The two 9·2-inch guns of the "Hogue," cruiser, scored 20 hits for 31 rounds, and the twelve 6-inch guns 50 hits for 110 rounds, showing a percentage of 35·4. The eight 4-inch guns of the "Pactolus," cruiser, fired 81 rounds for 21 hits, or a percentage of 25·9.

The total number of rounds fired was 1,231 for 578 hits, against 1,417 rounds for 560 hits in 1902, the diminution in the number of rounds fired being due to the absence of the "Prince George." The percentage of hits to rounds fired by the whole of the fleet was 41, showing that all the battle-ships were above the average and all the cruisers below it. The "Majestic's" high score with the 12-inch gun has never been reached by any other ship in the Service.

Steam Trials.—The new first-class battle-ship "Queen" has completed her trials successfully. During the thirty hours' run at one-fifth power, the ship experienced exceptionally heavy weather; the results were as follows:—Steam in boilers, 205 lbs.; steam at engines, 201 lbs.; high-pressure receiver, 175 lbs. starboard and 164 lbs. port; vacuum, 27 inches starboard and 27·3 inches port; revolutions per minute, 69·5 starboard and 68·3 port; I.H.P., high-pressure, 444 starboard and 535 port; intermediate, 495 starboard, and 527 port; low, 581 starboard and 476 port; total I.H.P., 1,520 starboard, and 1,538 port; gross I.H.P., 3,058; coal consumption per hour, 5,630 lbs.; coal consumption per I.H.P. per hour, 1·84 lbs. The average speed was 11·3 knots. The result of the thirty hours' trial at four-fifths power was also very satisfactory. The ship made four runs on the deep-sea course off the Cornish coast, and obtained a mean speed of 16·94 knots. The following were the mean results:—Steam in boilers, 232 lbs.; steam at engines, 223 lbs. starboard and 222 lbs. port; vacuum, 25 inches starboard, and 26 inches port; revolutions, 106·2 per minute starboard and 106·5 per minute port; I.H.P., 5,860 starboard and 5,810—total I.H.P., 11,670; coal consumption per I.H.P. per hour, 1·61 lbs. During her eight hours' full-speed trial she attained a speed of 18·4 knots. The mean results were as follows:—Steam in boilers, 243 lbs.; steam at engines, starboard 231, port 227 lbs.; air pressure in cylinders, 0·5; in vacuum starboard 26·3 inches, port 26·7 inches; revolutions, starboard 116·4, port 115·9; gross I.H.P., 15,556; coal consumption per I.H.P. per hour, 1·76 lbs. The ship will, after her machinery has been opened up, undergo another trial, by direction of the Admiralty, as a further test of machinery.

The new torpedo-boat destroyer "Exe" has completed her trial successfully off the Tyne. The coal-consumption trial was for the purpose of determining the amount of coal that would be burnt per hour at 13 knots, this being the most economical speed for this class of boat. This trial was of 12 hours' duration, and the first part consisted of six runs on the measured mile to find out the number of revolutions required for 13 knots. The mean results of the runs were 161 revolutions for 13.34 knots, the I.H.P. developed being 700, one-tenth only of the 7,000 at full speed of 25½ knots. Keeping up 160 revolutions for the remainder of the 12 hours, the amount of coal burnt was 5½ tons for the whole time. From this the coal consumption was deduced and worked out at 1.45 lbs. per I.H.P. per hour. The bunkers hold 130 tons, so that at 13 knots the radius of action is 3,000 miles approximately, which proves that the boilers, which are of the Reed type, are very economical. Two boilers only were used, and the steam pressure was kept at 160 lbs. per square inch. The vacuum in the condensers was 26 inches, and the machinery worked satisfactorily. The "Exe" will probably be delivered at Portsmouth by the end of January. Her first full speed trial was unsuccessful, owing to a hot crank bearing. On the day of the second trial the sea was moderately rough, with a stiff north-west wind; but the results were satisfactory, although, as in the case of the "Erne" recently, the metallic packing in the high-pressure glands was by no means tight, and this will have to be remedied. The six runs on the mile gave a mean speed of 25.33 knots, with 348.98 revolutions per minute, and 7,129 I.H.P., from which was deduced the fact that to get the requisite 25.5 knots for the remaining three hours the revolutions must be 351.32. On the completion of the trial the means were found to be 25.64 knots, 353.2 revolutions, and 7,147 I.H.P. The average steam pressure was 249 lbs. per square inch, air pressure in the stokeholds 2.3 inches, and vacuum 25 inches. The ship was loaded to 564 tons displacement, with a mean draught of water of 8 feet 4½ inches on leaving the harbour, and on returning it was reduced to 521 tons displacement, and 8 feet 2 inches mean draught, this giving a mean displacement of about 540 tons, the designed load.

The official trials of the new destroyer "Foyle," built by Messrs. Laird Brothers, of Birkenhead, have also been successfully completed. A successful four hours' full-power coal-consumption trial had previously been made, and at the official full-speed trial the vessel maintained a speed for four hours' continuous running of 25.65 knots. On both occasions the vessel was run in a fully-loaded condition. All the trials for steering, stopping, and starting were also successfully completed. The "Foyle" will be hastened forward for commission.—*The Times and Naval and Military Record.*

Naval Expenditure and Mercantile Marine.—Return [284, in continuation of Parliamentary Paper No. 373] showing Aggregate Naval Expenditure on Seagoing Force; Aggregate Revenue; Aggregate Tonnage of Mercantile Marine; Annual Clearances of Shipping in the Foreign Trade; Annual Clearances of Shipping in the Coasting Trade; Annual Value of Imports by Sea, including Bullion and Specie; and Annual Value of Exports by Sea, including Bullion and Specie, of various Countries, exclusive of China and South American Republics, but including British Self-governing Colonies, for the Year 1902.

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NOTE.—Except where otherwise stated, the figures refer to 1902. Where it has not been found possible to give the particulars for 1902, the figures for the latest year available have been shown.

Countries.	Aggregate Naval Expenditure on Seagoing Force.	Aggregate Revenue.	Aggregate Tonnage of Mercantile Marine.	Annual Clearances of Shipping in the Foreign Trade.	Annual Clearances of Shipping in the Coasting Trade.	Annual Value of Imports by Sea, including Bullion and specie.	Annual Value of Exports by Sea, including Bullion and specie.
	£	£	Tons.	Tons.	Tons.	£	£
BRITISH EMPIRE							
United Kingdom	34,904,554 (a)	151,551,698 (Year ended 31st March, 1903)	10,054,770 (b)	50,252,602 (c)	57,070,359	559,784,619	375,363,985
India	464,093 $\frac{1}{2}$ (d) $\frac{1}{2}$ (e) $\frac{1}{2}$ (f) (1901-1902)	76,344,525 (d) (Year ended 31st March, 1902)	67,636 (f)	4,669,778 (Year ended 31st March, 1902)	13,479,814 (Year ended 31st March, 1902)	72,921,256 (d) (Year ended 31st March, 1902)	90,910,768 (d) (Year ended 31st March, 1902)
SELF-GOVERNING COLONIES (p)							
Australian Commonwealth:							
New South Wales...	—	11,178,214 (Year ended 30th June, 1902)	129,725	4,338,058	No Returns	22,438,450	19,578,405
Victoria ...	—	48,872 (Year ended 30th June, 1902)	110,962	3,372,555	501,326	15,710,288	16,062,305
South Australia (except Northern Territory)	—	2,428,560 (Year ended 30th June, 1902)	53,105	2,014,740	No Returns	4,487,350	6,961,327
Northern Territory ...	—	48,872 (Year ended 30th June, 1902)	585	85,454	No Returns	107,218 (o)	150,998
Western Australia ...	—	3,595,224	12,519	1,686,905	No Returns	7,218,352	9,051,358
Tasmania ...	—	734,663	18,225	879,730	No Returns	2,442,745	3,244,508
Queensland ...	—	3,535,062 (Year ended 30th June, 1902)	25,245	1,032,119	3,956,846 (h)	6,827,767	8,075,469
Total: Australian Commonwealth	149,621 (r)	28,518,457 (g)	350,356	13,409,561 (j)	—	59,232,370 (q)	63,124,370 (q)
New Zealand ...	21,523 (r)	6,143,675 (Year ended 31st March, 1902)	104,320	1,048,770	8,309,635	11,326,723	13,644,977
African—							
Natal	— (s)	3,439,820 (Year ended 30th June, 1902)	1,819	1,904,134	Nil	15,656,052 (l)	3,653,790 (k)
Cape of Good Hope ...	30,000 (t)	9,050,371 (Year ended 30th June, 1902)	3,183	6,188,046 (i)	4,960,411	34,124,000 (l)	17,456,131 (k)
American—							
Dominion of Canada ...	—	11,932,662 (Year ended 30th June, 1902)	653,546	7,128,454 (m) (Year ended 30th June 1902)	19,455,258 (m) (Year ended 30th June 1902)	19,916,430 (n) (Year ended 30th June 1902)	30,450,719 (n) (Year ended 30th June, 1902)
Newfoundland	331 (u) (1901-1902)	450,891 (Year ended 30th June, 1902)	118,933	869,285 (Year ended 30th June 1902)	No Returns	1,610,874 (Year ended 30th June 1902)	1,963,574 (Year ended 30th June, 1902)

NOTE.—The above particulars with regard to Naval Expenditure have been furnished by the Admiralty. The remaining particulars have been extracted either from Board of Trade Returns or from the Official Returns of the various British Possessions.

REMARKS.

(a) Of this total £32,249,378 was ordinary expenditure, and £2,745,176 was expenditure under the Naval Works Act, 1901 (outside Navy Votes).

(b) Including the Isle of Man and Channel Islands.

(c) The tonnage of vessels employed by H.M. Government in the conveyance of troops, stores, etc., to South Africa is not included.

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(d) The rupee has been converted into sterling at the rate of 1s. 4d. the rupee,

(e) Including (1) £100,000 contribution towards His Majesty's ships on the East Indian Station, and (2) £61,600 subsidy to the Admiralty for manning and maintaining "His Majesty's ships and vessels for the Naval Defence of India." The balance represents expenditure on the Marine Department.

(f) In addition to the vessels registered under the Imperial Act of 1894, India owns some vessels of small tonnage registered under the Indian Act X. of 1841; these are not included in the table.

(g) Under the Commonwealth of Australia Constitution Act, 1900, various Departments were transferred from the States to the Commonwealth, and, after deducting the Commonwealth expenses from the Revenue collected, the balance is returned to the Governments of the States. The figures given for each State, in consequence, include only the net Revenue paid over by the Commonwealth.

(h) Including the tonnage of vessels (2,597,604 tons) engaged in coasting voyages terminating beyond the State.

(i) Exclusive of the tonnage of transports.

(j) Including inter-State shipping.

(k) Including the value of gold, the produce of South African States, brought into the Colony overland, and exported by sea.

(l) Including the value of goods entered for removal to other South African States.

(m) Exclusive of the tonnage of vessels (7,698,175 tons) trading on the rivers and lakes between Canada and the United States.

(n) Estimated value of Imports and Exports by sea. The value of total Imports and total Exports was £43,633,310 and £43,503,836 respectively.

(o) Including overland trade.

(p) The revenues of these Colonies are exclusive of loans raised.

(q) Including inter-State trade.

(r) The figures given for the Australian Commonwealth and for New Zealand include the annual contribution of £126,000 (payable in advance) towards the maintenance of His Majesty's vessels for protection of floating trade in Australasian waters. This contribution was apportioned amongst the various States of the Australian Commonwealth and New Zealand on a population basis for the year commencing April 1, 1902, as follows :—

New South Wales ...	£37,590	Queensland ...	£13,809
Victoria ...	33,024	New Zealand ...	21,523
South Australia ...	9,968		
Western Australia ...	5,325	Total ...	£126,000
Tasmania ...	4,761		

(s) A gift of 1,000 tons of coal (or £1,000) per month for the use of His Majesty's ships, etc, was made by the Natal Government.

(t) A sum of £30,000 was paid by this Colony towards the Expenditure by the Imperial Government in connection with His Majesty's Naval Service.

(u) Expenditure on Newfoundland Royal Naval Reserve.

Countries.	Aggregate Naval Expenditure on Seagoing Force.	Aggregate Revenue.	Aggregate Tonnage of Mercantile Marine (a).	Annual Clearances of Shipping in the Foreign Trade (b).	Annual Clearances of Shipping in the Coasting Trade (b).	Annual Value of Imports by Sea, including Bullion and Specie.	Annual Value of Exports by Sea, including Bullion and Specie.
Russian Empire	£ 10,446,392 (c)	£ 225,685,000	Tons. 664,208 (1901)	Tons. 9,715,000 (e)	Tons. 18,675,000 (e)	£ 29,250,000 (f) (g)	£ 49,546,000 (f) (g)
Germany ...	10,029,063 (d) (Year ended 31st March, 1903)	92,291,000 (Year ended 31st March, 1903)	2,083,633 (1901)	14,734,355 (1901)	4,368,687 (1901)	304,674,000 (h)	256,540,000 (h)
Netherlands ...	1,395,504	12,754,000 (1901)	407,309	9,419,236	—	Metric Tons. 12,215,000 (i)	Metric Tons. 3,796,000 (i)
France ...	12,407,325	146,807,000 (1901)	1,217,614	19,603,507	7,088,902	£ 172,365,000	£ 150,086,000
Portugal ...	598,575 (Year ended 30th June, 1903)	11,877,000 (Year ended 30th June, 1903)	118,696 (1901)	11,668,500	1,286,969	11,517,000 (f) (1901)	5,683,000 (f) (1901)
Spain ...	1,437,688	38,978,000	774,579 (1900)	15,171,858	12,363,182 (1901)	28,850,000	28,902,000
Italy ...	4,840,000	75,339,000 (Year ended 30th June, 1902)	999,918 (1901)	23,371,558	11,634,175	73,540,000 (h)	60,415,000 (h)
Austria-Hung'y	1,945,450	<div style="display: inline-block; vertical-align: middle;"> Austria. 83,100,000 (1901) Hungary. 43,811,000 (1901) </div>	<div style="display: inline-block; vertical-align: middle;"> Austria. 232,929 (1901) Hungary. 71,401 (1901) </div>	<div style="display: inline-block; vertical-align: middle;"> Austria. 2,346,464 (1901) Hungary. 1,023,300 (1901) </div>	<div style="display: inline-block; vertical-align: middle;"> Austria. 10,681,846 (1901) Hungary. 1,236,966 (1901) </div>	13,330,000 (f)	13,315,000 (f)
United States (Year ended 30th June)	16,203,916 (1902-3)	142,568,000	882,555 (k)	24,242,104 (l)	—	186,787,000	281,031,000
Japan ...	2,899,415 (Year ended 31st March, 1903)	28,636,000 (Year ended 31st March, 1903)	917,879 (m)	4,608,567 (1899)	4,594,860 (1899)	32,285,000 (n)	28,676,000 (n)

REMARKS.

NOTE.—The above particulars with regard to Naval Expenditure have been furnished by the Admiralty. The remaining particulars have been extracted from the Official Returns of the various countries mentioned, except in the case of Russia and Spain, for which countries the particulars relating to Revenue have been extracted from the "Bulletin de Statistique, etc.," 1902, published under the authority of the French Minister of Finances.

NOTE.—The actual Naval Expenditure for any year is seldom known—never immediately—the figures given, therefore, are the sums voted.

With regard to the revenue and commerce of foreign countries, in converting the foreign currencies into £'s sterling the par value of the foreign money has been taken.

(a) The figures relating to the tonnage of the Mercantile Marine are given in gross tons in the case of Portugal, Spain, and the United States, and in net tons in other cases.

(b) The figures relating to the clearances of shipping are given in gross tons in the case of Portugal and Spain, and in net tons in other cases.

(c) In addition to the ordinary estimates, a sum of £11,500,000 allotted in 1897 and 1898 is being spent on naval expansion.

(d) The cost of the maintenance of the forts at naval ports is included.

(e) The figures refer to Russia-in-Europe and the Caucasian ports of the Black Sea.

(f) Special Trade—i.e., imports for home consumption or exports of domestic produce or manufacture, as the case may be.

(g) Trade by European sea-board, including also Finland.

(h) Total Trade. Imports and exports by sea are not separately distinguished.

(i) The particulars as to value of trade by sea are not available.

(k) Registered for over-sea—i.e., foreign trade and whale fisheries.

(l) Exclusive of the tonnage of vessels (6,201,978 tons) engaged in the Lake trade between the United States and Canada.

(m) The tonnage of Japanese vessels is the gross tonnage of vessels of foreign type, excluding junks, but including certain sailing vessels of half-foreign and half-Japanese type.

(n) Including Formosa.

H. LLEWELLYN SMITH.

Commercial, Labour, and Statistical Department,
Board of Trade, December, 1903.

[Previous Returns of this nature have been published in 1894, 1896, 1897, 1898, 1899, 1901, 1902, and on Jan. 10, 1903.]

FRANCE.—The following is the principal appointment which has been made: Vice-Admiral—E. M. F. Richard to be President of the Naval Council of Works.—*Journal Officiel de la République Française*.

Vice-Admiral Marquis took over the command at Rochefort on the 9th ult., the usual ceremonies being observed.

The Minister of Marine on Submarines and Submersibles.—Speaking in the French Chamber on 2nd December last, M. Pelletan, Minister of Marine, made the following statement regarding the rival merits of submersibles and submarines:—

"There is a difference of opinion between the schools of Toulon and Cherbourg, one affirming the superiority of the submarine, and the other of the submersible type. The difference between the two is that the former when at the surface are almost awash, while the latter have a certain amount of freeboard, and thus have greater navigability. It is evident that the further a vessel is out of the water the greater is its buoyancy, and the longer the time thus required for its submersion. The boats of 400 tons, which have been ordered, if they were submersibles would require 30 per cent. of their displacement, or 120 tons of water, in order to submerge them, but only 6 or 7 per cent., or something less than 30 tons of water, if they are submarines. In my opinion, this not being able to dive quickly and the necessity for letting in a large quantity of water, is one of the great defects of the submersible. It is not to be denied, however, that the submersible has a great hygienic advantage, in the men being able to come on deck, even in a rough sea, and get a breath of fresh air, which it is difficult for them to do in the submarines as at present constructed. Future submarines would be provided with a bridge above the deck, where it will be possible for the men to get air, while at the same time they will retain the advantage of being more readily and quickly submerged. The chief guarantee that a submarine possesses against destruction is that of being able to disappear quickly, and it is this quality that gives superiority to the submarine proper over the submersible type. This defect in the latter might be remedied to some extent; but it was the reason why M. de Lanessan himself suspended the construction of this class. I consider it necessary to give our submarines greater offensive power by increasing their tonnage, and for this reason, after having carefully studied the question, I have been induced to sanction the building of six submarines of 1,500,000 francs (£60,000) each, and with a displacement of 400 tons."

Recall of the "Jurien de la Gravière."—We have had on more than one previous occasion to comment on the failure of the new first-class cruiser "Jurien de la Gravière" to realise any of the expectations which were formed of her, and it is now reported that she is to return home from the West Indies on account of serious defects which have developed in her engines. Two frames of her centre and one of her starboard engines have cracked owing to the great vibration of the hull when steaming at only a moderately high rate of speed. The frames in question are rigidly fixed to the inside of the hull, and the vibrations of the hull and engines not being in accord, they have been unable to stand the strain. This result was predicted as likely to occur in a report made by her captain nearly twelve months ago. The cracks in the frames of the central engines are respectively 9 inches and 12 inches long, and in that of the starboard engine 2 inches long.

Launch of the "Patrie."—The new first-class battle-ship "Patrie," the second of the six battle-ships of the new programme to take the water, was successfully launched from the La Seyne Yard, Toulon, on 17th December; the "République," the first of the class, was launched at Brest on the 4th September, 1902. Her dimensions are as follows:—Length, 439 feet; beam, 79 feet 6 inches; with a displacement of 14,865 tons, and engines developing 17,475 I.H.P., to give a speed of 18 knots. Her armament, like that of the République, will consist of:—Four 305-mm. (12-inch), eighteen 164-mm. (6·48-inch), twenty-six 47-mm. (1·85-inch), and two 37-mm. (1·45-inch) guns, and she has five torpedo discharges, two of which are submerged. It is understood that in the four remaining ships of the class ten 7·6-inch Q.F. guns will be substituted for the eighteen 6·4-inch Q.F. guns. The ship is to be fitted with water-tube boilers of the Niclausse type. Contrary to custom no baptismal or other ceremony was observed at her launch.

Dockyard Disorganisation.—Under the heading of "Anarchy in the Arsenal at Brest," the *Temps* publishes the following:—"Our correspondent at Brest writes that the Arsenal is in a state of complete anarchy, the heads of departments and foremen are no longer able to get their orders obeyed or to maintain discipline; the workmen only work when they please, and threaten their chiefs if they interfere."

On account of serious thefts of metal and other stores in the arsenals, particularly at Toulon, the Minister of Marine has issued a circular directing the division of the arsenal into sections, each of which is to be guarded by a post of four gendarmes. The guards will carry revolvers and call whistles at night, and will wear overcoats of stone colour, cord soles to their boots to muffle the noise of their steps. Trials are also to be made of watch dogs, which are said to have been used with good results in Germany.

The Organisation of the Défenses-Mobiles for 1904.—Considerable progress has been made in the re-organisation of the *Défenses-Mobiles*, a commencement having been made last year with many of the reforms which it was only intended to introduce this. The trials of the new destroyers and torpedo-boats have been carried out far more successfully and rapidly than formerly, and it is now hoped that the present year will see the complete realisation of the scheme of re-organisation, which has been hanging fire for so long.

The principal feature of the proposals in the Budget for the year are the definitive organisation of divisions of six torpedo-boats, with a destroyer at their head in place of a torpilleur de haute-mer only. In each centre of the existing *Défense-Mobile*, it will be possible three hours after

DÉFENSES-MOBILES IN 1904.		In Commission. (Torpedo-boats for Training purposes, and Depot-ships.)	En Disponibilité. (Torpedo-boats ready for immediate mobilisation.)	In Reserve. (Relief Torpedo-boats.)
<i>First Arrondissement</i>	DUNKERQUE	Torpedo-boat destroyer "Durandal." Armoured gun-boat "Cocyte." 6 first-class torpedo-boats.	6 first-class torpedo-boats. 1 torpilleur de haute mer, "Archer."	4 first-class torpedo-boats.
	CHERBOURG	Torpedo-avisos "Bombe."		
		2 first-class torpedo-boats (schools for pilots).	2 division torpedo-boat destroyers: "Yatagan," and "Escopette."	11 first-class torpedo-boats. 4 second-class torpedo-boats.
		3 first-class torpedo-boats and 3 second-class. 1 torpilleur de haute mer, "Zouave," and 1 second-class as a school for stokers.	12 first-class torpedo-boats.	
<i>Second Arrondissement</i>	SAINT-SERVAN	1 division torpedo-boat destroyer "Rapière." 3 first-class torpedo-boats.	3 first-class torpedo-boats.	2 first-class torpedo-boats.
	LEZARDRIEUX	Pontoon "Rhin."		
	LABERWRACH	Pontoon "Obligado."		
	BREST	Torpedo-avisos "Salve," 2 first-class torpedo-boats (master pilots). 2 first-class torpedo-boats and 4 second-class for training purposes. Torpilleurs de haute mer "Veloce," and "Corsaire," alternatively, and 1 second-class for the school for stokers.	2 division torpedo-boat destroyers: "Fauconnier" and "Pertuisane." 6 torpilleurs de haute mer: "Trombe," "Mistral," "Simoun," "Siroco," "Typhon," "Audacieux." 6 first-class torpedo-boats.	6 torpilleurs de haute mer: "Aquilon," "Dauphin," "Mangini," "Lancier." 4 first-class torpedo-boats. 7 second-class torpedo-boats.
<i>Third Arrondissement</i>	LORIENT	Torpedo-avisos "Lance," 1 first-class torpedo-boat (school for pilots). 3 second-class torpedo boats.	1 division torpedo-boat destroyer, "Harpon." 6 first-class torpedo-boats.	6 first-class torpedo-boats. 2 second-class torpedo-boats.
	LA TRINITÉ	Pontoon "Crocodile."		

<i>Fourth Arrondissement</i>	<i>ROCHEFORT</i>	Torpedo-aviso "Couleuvrine." 1 first-class torpedo-boat (master pilots). 1 first-class torpedo-boat and 2 second-class (for training purposes).	1 torpilleur de haute mer, "Grondeur." 6 first-class torpedo-boats.	4 first-class torpedo-boats. 2 second-class torpedo-boats.
<i>Fifth Arrondissement</i>	<i>TOULON</i>	Torpedo-aviso "Dragonne." "Sarrazin" and 1 first-class (master pilots). "Eclair" and "Orage" (school for stokers). 2 first-class torpedo-boats and 4 second-class (for training purposes). 7 second-class torpedo-boats and 1 torpedo-vedette in a special situation (schools, etc.)	Division torpedo-boat destroyers "Dunois" and "Pique." 6 torpilleurs de haute mer: "Borée," "Tramontane," "Kafale," "Bourrasque," "Cyclone," "Forban." 6 first-class torpedo-boats.	3 torpilleurs de haute mer: "Chevalier," "Kabyle," "Flibustier." 14 first-class torpedo-boats. 10 second-class torpedo-boats. 3 third-class torpedo-boats. 1 torpedo-vedette.
	<i>PORT-VENDRES</i>	Pontoon "Faune."		
<i>Corsica</i>	<i>AJACCIO</i>	Torpedo-aviso "Lévrier." 6 first-class torpedo-boats.	Division torpedo-boat destroyer "Epée." 6 first-class torpedo-boats.	4 first-class torpedo-boats.
	<i>BONIFACIO</i>	Pontoon "Hamelin."		
	<i>BASTIA</i>	Pontoon "Entrepreneur."		
<i>Algeria</i>	<i>ORAN</i>	Torpedo-aviso "Dague." 6 first-class torpedo-boats.	Division torpedo-boat destroyer "Hallebarde." 6 first-class torpedo-boats.	4 first-class torpedo-boats.
<i>Tunis.</i>	<i>BIZERTA</i>	Torpedo-boat destroyer "Casabianca." "Agile" and "Aventurier" (master pilots). 6 first-class torpedo-boats.	6 torpilleurs de haute mer: "Coureur," "Dragon," "Turco," "Averno," "Tourmente," "Argonaute."	4 first-class torpedo-boats.
<i>Cochin-China</i>	<i>SAIGON</i>	Torpedo-boat destroyer "Takou." 3 third-class torpedo-boats.	3 first-class torpedo-boats.	2 third-class torpedo-boats.

the order to mobilise, to send to sea one or two divisions of torpedo-boats or torpilleurs de haute-mer, according to the resources of the port, headed by one of the destroyers of the "Durandal" type. An examination of the composition of the *Défenses-Mobiles* for this year shows that many of the old second-class torpedo-boats have been replaced by new first-class ones, and that during the present year they will all be so replaced. The older first-class boats, too, are now used for training purposes. The *Défenses-Mobiles* best organised from the point of view of the number and quality of the units will be those of Brest and Toulon, the two dockyards which have to be ready to furnish torpilleurs de haute-mer for the battleship squadrons, when the occasion arises. Tunis will also have a complete division of six torpilleurs de haute-mer.

In the preceding table the destroyers in commission will be at the same time the *Divisionnaires*. The torpedo-boats in reserve belong to different categories, A, B or C, and will be ready to replace at a moment's notice those in the first line. The torpedo-boats marked in the second column as *en disponibilité* constitute the offensive divisions. The others, the boats for training purposes and those ready for relief purposes, will be the last to be commissioned with the remaining resources of the ports for the immediate defence of the roads and harbours they belong to.

The Budget makes no mention of any torpedo-boats for the defence of Diégo-Suarez, although two first-class boats are *en route* for that place; and it is probable that, if not this year, at least next, a regular *Défense-Mobile* will be organised for that base, as well as for Dakar and Martinique.

The following is the distribution of the submarines and submersibles in commission during 1904:—

1. *Cherbourg*.—The submersibles, "Narval," "Sirène," "Silure," "Espadon," and "Triton" (12 months); the submarines, "Morse," "Français," "Algérien," "Naiade," "Protée" (12 months); "Lynx" (11 months); "Ludion" (10 months); and "X," one of the new type (3 months).

2. *Rochefort*.—La Pallice.—The submarines, "Loutre" (10 months); "Castor" (8 months); "Otarie" (2 months); "Z," one of the new type (8 months).

3. *Toulon*.—The submarines, "Zédé," "Gymnote," "Perle," "Esturgeon" (12 months), "Bonite," "Thon" (11 months); "Souffleur," "Dorade" (10 months); "Grondin," "Anguille" (8 months); "Aloise," "Truite" (7 months); "Y," one of the new type (12 months); the submersibles, "Aigrette" (4 months), "Cigogne" (1 month).

4. *Bizerta*.—Submarines, "Farfadet," "Korrigan," "Gnôme," "Lutin" (12 months).

In all, by the end of 1904, we ought to have in commission at the four ports named above 36 submarines and submersibles; but judging from the present state of completion of many of the vessels named, this estimate is, we are afraid, rather optimistic.—*Le Yacht, Le Temps, and Le Petit Var*.

GERMANY.—The following are the principal promotions and appointments which have been made: Vice-Admirals — Freiherr von Senden-Bibran, Bendemann, von Tirpitz, to be Admirals; Geissler for service at the Ministry of Marine. Kapitän zur See—von Holtzendorff to be Commodore, while acting as Second-in-Command of Cruiser Squadron.—*Marineverordnungsblatt*.

A larger number of ships have been launched in 1903 for the German Navy than in any previous year. In 1897 six ships took the water;

in 1898, four; in 1899, six; in 1900, seven; in 1901, six; in 1902, five; while the number rose to ten last year, viz., three first-class battle-ships, one first-class armoured cruiser, three third-class cruisers, one gun-boat, and two river gun-boats. It is noteworthy that the three battle-ships launched were all built at private yards: the "Elsass" at the Schichau Works, Dantzig; the "Preussen" at the Vulcan Yard, Stettin; and the "Hessen" at the Germania Yard, Kiel, which belongs to the great Krupp firm. The "Roon," the first-class armoured cruiser launched, was the only one of the ten which was built at one of the Imperial dockyards, and she was built at Kiel. Two new battle-ships were laid down during the year, one at the Germania Yard, Kiel, and the other at the Schichau Works, Dantzig; while a new first-class armoured cruiser has been laid down at the Imperial Dockyard, Kiel, and two third-class cruisers have also been laid down. The first launches of the ships laid down under last year's Estimates will take place early next summer, and will be the two small cruisers "M," and Ersatz "Merkur," which are being built at the Weser Yard, Bremen, and the Vulcan Yard, Stettin, respectively.

Vessels Building.

Name.	Displacement.	Where Building.	Remarks.
<i>Battle-ships.</i>			
Mecklenburg	11,900	Stettin.	Under trial.
Schwaben	11,900	Wilhelmshaven	Lehd. Aug., 1901; compl. 1903.
Braunschweig	13,200	Kiel.	Lehd.; complete in 1904.
Elsass	13,200	Dantzig.	" May 26th, 1903.
Preussen	13,200	Stettin.	" Oct. 31st, 1903. To be compl. 1905.
Hessen	13,200	Kiel.	Lehd. Sept. 18th, 1903.
M	13,200	Dantzig.	Building.
N	13,200	Gaarden.	"
<i>Armoured Cruisers.</i>			
Prinz Heinrich	8,868	Kiel.	Under trial.
Prinz Adalbert	9,050	"	"
Prinz Friedrich Karl ...	9,050	Hamburg.	Lehd. June, 1902.
Roon	9,050	Kiel.	Lehd. June 27th, 1903.
E (ersatz Deutschland)	9,050	Hamburg.	Building.
F	9,050	Kiel	"
<i>Protected Cruisers.</i>			
Frauenlob	2,715	Bremen.	Under trial.
Arcona	2,715	"	"
Undine	2,715	Kiel.	Lehd. Dec. 1902; compl. 1903.
Hamburg	3,000	Stettin.	Lehd. July 25th, 1903.
Bremen	3,000	Bremen.	Lehd. July 9th, 1903.
Berlin	3,000	"	Lehd. Sept. 22nd, 1903.

New Ships and Dockyard Notes.—The work is proceeding apace at Wilhelmshaven with the first-class battle-ship "Wörth," one of the four ships of the "Brandenburg" class, which has been undergoing a partial reconstruction, with the view of bringing her up to date; the ship ought to be completed ready for her trials this month, and for the last few weeks men have been transferred to her from the new battle-ship "Schwaben," the date for the completion of which has been extended. Her three sister-ships, which are also undergoing reconstruction in the same yard, will not be finished for another year or eighteen months. Among other alterations which are being carried out, is the substitution of water-tube

for the old cylindrical boilers; the removal of all superfluous wood; the fitting of submerged torpedo-tubes; and the placing of two additional 4.1-inch guns in the casemated battery.

The new first-class armoured cruiser "Prinz Adalbert" is to be commissioned in January next, when she will take the place of the second-class cruiser "Victoria Luise," in the Cruiser Division of the Battle Fleet; the officers and men of the "Victoria Luise" are to turn over to the "Prinz Adalbert."

The second of the new dry docks at Kiel is approaching completion, and ought to be very shortly opened for use. The first of the new docks was opened in December, 1902; these docks are some 560 feet long, with a depth on sill of thirty feet, and as they open directly on the harbour, they are much more conveniently situated than the old ones, which are, moreover, much smaller, the largest being only 360 feet long, with a width of 77 feet, and a depth of 27 feet 6 inches. The pumps are worked by electricity, and the docks are emptied very quickly. Three new docks are being built at Wilhelmshaven, but owing to difficulties encountered in their construction, some time will elapse before any of them are ready.

At the dockyard in Dantzig progress is being made in completing the three coast-defence battle-ships "Ægir," "Siegfried," and "Odin"; the two first-named ships have left the slip after having been lengthened like the other vessels of the class, and are expected to be out of the dockyard hands early this year; another vessel of this class, the "Frithjof" is in the dockyard hands at Kiel, for similar reconstruction.

Destroyer Divisions.—The fifth torpedo-boat destroyer division has now been completed by the delivery from the Schichau Yard at Elbing of "S 119," the division consisting of the six boats from "S 114" on; these destroyers are all vessels of 350 tons, with engines developing 6,000-I.H.P., giving a speed of from 29 to 30 knots; they are 207 feet long, with a beam of 22 feet, and a draught of 8 feet 9 inches, and they are armed with six 3-pounders and two torpedo-tubes. The Schichau Yard will now proceed with the construction of a sixth division, "S 120" to "S 125," one of the new vessels being fitted with turbine engines for the purpose of experiment.

Steam Trials.—The new first-class battle-ship "Mecklenburg," one of the "Wittelsbach" class, built at the Vulcan Works, Stettin, has completed her steam trials successfully. The ship is fitted with six cylindrical and six water-tube boilers, of the Schultz pattern, and with three triple-expansion engines to develop 13,600-I.H.P., under forced draught, to give a speed of 18 knots, while making 110 revolutions per minute. At the ninety-three hours' endurance trial for coal consumption at 9,500-I.H.P., the engines actually developed 9,659-I.H.P., making 96 revolutions, with a speed of 16.4 knots. During the first twenty-eight hours the coal consumption per I.H.P. per hour was 744 gr. (1.48 lbs.). The cylindrical boilers were used without any air-pressure but with the water-tube boilers there was a medium pressure of 12.5 mm. (0.49 inch). At the six hours' full speed under forced draught a mean speed of 18.1 knots was maintained for some hours. At a twenty-four hours' coal-consumption trial with one engine, 3,188-I.H.P. was developed, the consumption working out at 702 gr. (1.4 lbs.) per I.H.P. per hour. The engines and boilers worked perfectly satisfactorily throughout the trials.

Two of the new third-class cruisers of the "Undine" type, the "Frauenlob" and "Arcona," have recently successfully completed their trials. They are sister-ships of 2,700 tons, displacement, and the engines

had to develop 8,000-I.H.P., making 165 revolutions per minute, giving a speed of 21 knots. The "Frauenlob" was built at the Weser Yard, Bremen; at her twenty-four hours' coal-consumption trial with the engines developing 5,600-I.H.P., 5,579-H.P. was actually developed, and making 139.5 revolutions per minute; the consumption being 897 gr. (1.79 lbs.) per I.H.P. per hour, with an air pressure of 17.5 mm. (0.68 inch). During the ninety-three hours' endurance trial the engines developed 5,746-I.H.P., making 141.7 revolutions, giving a speed of 19.2 knots. At the six hours' full-speed trial, the engines developed 8,594-I.H.P., making 159.5 revolutions, giving a speed of 21.102 knots, which is slightly above the contract. With the engines developing 1,259-I.H.P., making 83.9 revolutions, the speed was 11.8 knots; with 3,576-I.H.P., and 121.3 revolutions, the speed was 16.68 knots.

The "Arcona" was also built at the Weser Yard, Bremen; at her six hours' full-speed trial under forced draught, the engines developed 8,587-I.H.P., making 163.7 revolutions, with an air pressure of 38.5 mm. (1.51 inches). At the twenty-four hours' run, with the engines developing 1,200-I.H.P., the coal consumption was 897 gr. (1.794 lbs.) per I.H.P. per hour. At the twenty-four hours' coal consumption trial at 5,600-I.H.P., the engines developed 5,727-I.H.P., making 145.7 revolutions, with an air pressure of 19 mm. (0.74 inch), and a coal consumption of 895 gr. (1.79 lbs.). The details of the ninety-three hours' endurance trial are not given, but the engines and boilers are reported to have worked satisfactorily. The following are the mean results of the principal trials:—

Revolutions	161.1	148.0	119.25	88
I.H.P.	8,291	5,881	3,165	1,318
Speed	21	19.54	15.95	12.04

—*Neue Preussische Kreuz-Zeitung, Ueberall, and Marine Rundschau.*

UNITED STATES.—*Trial of the "Des Moines."*—The new third-class cruiser "Des Moines," built by the Fore River Ship and Engine Company, completed her official trial trip over the Cape Ann Course on December 5th. She averaged 16.633 knots per hour, with very little vibration, and steered well. The principal figures of the trial are the following:— Time for first leg, 2 hours 0 min. 2 secs.; turn made in 7 mins. 37 secs., the quickest record for the course; time for last leg, 1 hour 58 mins.; total for the full course, 3 hours 58 mins. 2 secs. Knots per hour, 16.633; contract speed requirement, 16.50 knots; top speed of the test nearly 16.90; average propeller revolutions per minute, 188; number of revolutions, outward run, 22,553; return, 22,237.

The "Des Moines" is sheathed with wood and coppered, and has two masts and two funnels; she is 292 feet on the water-line, and has a beam of 44 feet; with a mean draught of 15 feet 9 inches, and a loaded displacement of 3,500 tons. She has two vertical expansion engines of 4,700-H.P., twin screws, six water-tube boilers with 300 square feet of grate surface, and bunker room for 697 tons of coal.

The chart house is built of bronze to prevent magnetic disturbances of the compasses. The vessel has an admirable system of ventilation, which keeps the firemen cool, and diffuses fresh air in every part of the ship.

The electrical power is generated by four direct-connected generators, and includes as accessory equipment two hoisting winches and 10 ammunition winches. The lighting is provided by four arc-lights in the engine-room, and 360 incandescent lamps throughout the ship.

She has a wireless telegraph plant, search-lights, a protective belt of cornph cellulose, and is divided into numerous water-tight compartments.

All woodwork is fire-proofed, and the walls of all quarters are of corrugated steel.

The officers' quarters are furnished in mahogany. The entire interior of the hull is painted with cork paint to absorb moisture, and is sheathed with asbestos. She will have a complement of 30 officers and 281 men.

Ships under Construction.—The degree of completion on 1st December of vessels under construction for the United States Navy was as follows:—Battle-ships.—“Missouri,” 99 per cent.; “Ohio,” 83; “Virginia,” 50; “Nebraska,” 30; “Georgia,” 40; “New Jersey,” 48; “Rhode Island,” 48; “Connecticut,” 24; “Louisiana,” 31; “Vermont,” 13; “Kansas,” 2; “Minnesota,” 8. Armoured cruisers.—“Pennsylvania,” 63 per cent.; “West Virginia,” 67; “California,” 48; “Colorado,” 67; “Maryland,” 63; “South Dakota,” 44; “Tennessee,” 12; “Washington,” 9. Protected cruisers.—“Denver,” 93 per cent.; “Des Moines,” 96; “Chattanooga,” 72; “Galveston,” 69; “Tacoma,” 96; “St. Louis,” 34; “Milwaukee,” 33; “Charleston,” 55. Gun-boats.—“Dubuque,” 15 per cent.; “Paducah,” 13. Training-ships.—“Cumberland,” 7 per cent.; “Intrepid,” 0. Training-brig.—“Boxer,” 3 per cent. Torpedo-boats.—“Stringham,” 93 per cent.; “Goldsborough,” 99; “Blakely,” 99; “Nicholson,” 99; “O'Brien,” 98; “Tingey,” 100. Steel tugs.—“Pentucket,” 96 per cent.; “Sotoyomo,” 95.

A New Departure in Explosives.—On 13th November, Dr. Hans Goldschmidt, of Essen, Germany, lectured in Columbia University on “Alumino-Thermics,” or production of high temperatures by burning aluminum, and the application of this to metallurgy and engineering.

He showed how, by producing in a suitable manner the combination of oxygen and aluminum, a temperature is created about equal to that of the electric arc-light, and how, by the mixture of certain metallic oxides with powdered aluminum—thermite—and igniting it, the heat obtained by the reaction is used in producing a number of new metals and alloys, among which is mentioned chromium, free of carbon, pure manganese, molybdenum, ferro-vanadium, ferro-boron, manganese-boron, lead-barium, et al., and how the heat is also used for welding iron and steel. As a remarkable instance of the latter use he described the welding *in situ* of the broken 9,000-ton stern-post of the Hamburg-American liner “Sevilla.”

Astonishing as this is, the more so is the fact that powdered aluminum in certain mixtures constitutes a very violent explosive, probably more powerful than any other known mixture. This is due to the fact that the combustion of aluminum at the moment of explosion increases the heat of the gases so much that they are expanded to a very high degree.

Explosives with aluminum as an ingredient are the invention of Herr Hans von Dahmen, of Vienna, Austria, and have been patented by him in all countries. He uses nitrate of ammonia with certain percentages of powdered metallic aluminum, for some purposes adding charcoal, and he has given to these explosives the name of ammonal. They are manufactured in the prominent powder works of Mayr and Roth at Felixdorf, Austria, both for military and mining purposes.

Ammonal as a Bursting Charge in Projectiles.—The problem of firing shells with high explosives for bursting charges from modern high-power guns has never been solved to perfect satisfaction. Gun-cotton, dynamite, nitrogelatin, melinite, lyddite, and other explosives, under a great variety of names, have failed so far. At least the degree of safety

with which so charged projectiles can be fired from the guns is still uncertain, and occasional premature bursting inside the gun, destroying the gun and often killing the crew, is not wholly prevented. In most of these instances an explanation for the irregular action of the bursting charge cannot be found, but the fact remains, a serious warning against the use of the existing explosives for such purpose. In contrast to this behaviour of the present explosives, ammonal cannot be exploded by shock; explosive shells filled with ammonal have been fired many times from guns with pressures up to 3,000 atmospheres, or nearly 45,000 lbs. per square inch.

The present explosives, without exception, require for their regular explosion very strong fuses or detonators; their power of action is even dependent on the strength of the fuses, that is to say, the stronger the fuse the more powerful the explosion. And strong fuses in themselves present an element of danger in transportation as well as in firing. Ammonal, on the contrary, is exploded by the ordinary fuses, like bursting charges of black powder, which bring out its full strength.

The reason for this contrast between the present explosives and ammonal is that the former are chemical compounds, liable to combustion of different grade, producing different quantities of gases and of different heat and expansion according to the different grades of ignition. Ammonal, on the contrary, like ordinary powder, is a mechanical mixture, acts on a different principle, and when ignited, always develops the same quantity and tension of its explosion gas.

Armour-piercing shells filled with ammonal will withstand the shock of hitting the armour and of breaking through it without exploding until the fuse acts. In case the shell breaks up in hitting or perforating armour, the ammonal bursting charge will not explode. On the other hand, when ignited by the fuse, the bursting charge of ammonal will explode with full power, notwithstanding any amount of compression it may have undergone by the force of impact.

As with all compounds of ammonium nitrate, it is a serious question how sensitive ammonal is under the influence of moisture. The facts are the following:—Pure ammonium nitrate is non-hygroscopic. Cartridges of ammonal prepared at Felixdorf, although exposed for a prolonged period to an atmosphere saturated with moisture, had not deteriorated in any way. Cartridges fired with a quantity of moisture far in excess of what can be taken up by this explosive during careful manufacture, or after fair storage, gave entirely satisfactory results. An English authority on explosives says:—"I have successfully detonated cartridges containing 10 per cent. of moisture by placing a dry cartridge containing the detonator on top, without any loss of power. I can therefore emphatically state that no difficulty is to be apprehended on this point." But of course, ammonal prepared with ordinary nitrate of ammonium ought to be stored in hermetically-sealed vessels the same as other powders and explosives.

Realising these qualities of the new explosive, ammonal, the Austrian artillery has, after ample experiments, adopted it for bursting charges. The effect of a given quantity of ammonal is not dependent on the strength of the fuse, but it is dependent on the percentage of powdered aluminum it contains. By this means its effect can be easily regulated and foretold; it can be varied within wide limits. The strongest mixture, containing about 20 per cent. of aluminum, is even more powerful than blasting gelatine, and it is this grade which is used in the Austrian artillery.

The present price of ammonal is sufficiently low to allow it to compete favourably with dynamite and other explosives. Besides, it is more than probable that the price will be further reduced by an ever-growing market for it. The manufacture of ammonal, until now carried on only at Felixdorf, is still a secret. Aluminum is used in the form of an impalpable powder for military purposes, and as a slightly coarser powder for mining purposes. The disintegration of the metal to produce the fine powders is an especially invented process at Felixdorf, probably based on the experience that the aluminum metal at certain temperatures becomes very brittle.

Ammonal, in order to produce the greatest explosive power, can be compressed to a specific gravity of 1·85, and consequently confined in a very narrow space. Such compression does not influence its easy ignition or the heat produced by its combustion. The new explosive, having great safety in manufacture, handling, and transportation, with the highest efficiency, deserves the close attention of mining engineers, as well as of the naval and military authorities.—*U.S. Army and Navy Journal*.

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS FOR DECEMBER, 1903.

Major-General F. Hardy to be Colonel of the York and Lancaster Regiment. Lieut.-General S. M. Wiseman-Clarke, C.B., to be Colonel of the King's Own Scottish Borderers. Major-General R. A. Montgomery, C.B., from commanding Royal Artillery, Southern District, to be a Major-General on the Staff to command the Southern District. Major-General H. C. O. Plumer, C.B., from commanding 4th Brigade, 2nd Division 1st Army Corps, to be a Major-General on the Staff to command the 10th Division and 19th Brigade, IVth Army Corps. Colonel (temporary Brigadier-General) H. J. Scobell, from a Brigadier-General on the Staff, to be a Major-General on the Staff to command the 1st Cavalry Brigade, 1st Army Corps, and is granted the rank of Major-General in the Army. Colonel H. E. Belfield, C.B., D.S.O., from A.A.G. 1st Army Corps, to be a Brigadier-General on the Staff to command the 4th Brigade, 2nd Division, 1st Army Corps, with the temporary rank of Brigadier-General whilst so employed. Lieut.-Colonel and Brevet Colonel R. C. B. Lawrence, from h.p., to be A.A.G. 1st Army Corps, and is granted the substantive rank of Colonel in the Army. Colonel (temporary Brigadier-General) F. Ventris, from a Brigadier-General, to be a Major-General on the Staff, to command the troops in North China, and is granted the rank of Major-General in the Army. Major-General W. F. Vetch to be Colonel of the Royal Dublin Fusiliers.

AUSTRIA-HUNGARY.—*Measures for Increasing the Attraction of Military Service.*—In the course of the year now drawing to a conclusion, the Austro-Hungarian War Minister has introduced many measures with the object of relaxing, without weakening, discipline, by the suppression of all useless or excessive punishments, which, whilst imparting a severe and disagreeable character to discipline by infringing on the individual's self-respect, awake in the officer or man a spirit of insubordination and disgust

for his profession. In the month of June last, the Minister addressed a circular to all commanders of troops, on the method in which subaltern officers should be treated by their superiors. This circular, it is true, was not published officially, but it has been reproduced and favourably commented on by the whole Press. The object of the Ministerial memorandum was to stimulate amongst officers "A love of their profession, the more necessary as it was impossible for them to hope for any material amelioration of their position in the immediate future, and because a certain number of publicists endeavour, more or less conscientiously, to undermine the solid foundation of the Army by disseminating discontent in its ranks." The Minister, consequently, recommends commanders of units to leave to officers under their orders, each in his own sphere, the greatest amount of initiative and latitude compatible with the proper execution of duty; to abstain from endeavouring to regulate all matters by vexatious orders; to foster the *amour-propre* of officers by the avoidance of all brutality and coarseness in dealing with them; to stimulate their zeal by encouragement and praise when there is occasion for it; and to avoid employing them on duties that would be more suitably performed by non-commissioned officers. Such are the precepts that commanding officers must impress on themselves for regulating their attitude with regard to officers of inferior rank. As regards cadets, it should not be forgotten that their position as candidates for commissions gives them the right to be treated with discretion; without descending to familiarity they should be shown both kindness and consideration. Finally, the Ministerial circular calls the attention of officers commanding army corps to the necessity for exercising a discrete supervision of the method of the private life of their officers, so as to prevent the latter from launching into expense disproportionate to their means. The regimental institutions should contribute towards facilitating the material existence of officers, but on the condition that they must be apportioned with due regard to those who have only their pay to live on. Commanders of corps should restrain, with all their power, certain extravagances which sometimes arise on the occasions of regimental fêtes, promotions, anniversaries, inspections, and sports, which have the result of drawing officers into excessive expenditure.

After the officer, the rank and file are dealt with: An Imperial decision, published in the *Verordnungsblatt*, of the 26th October last, modifies the regulations on interior economy with regard to disciplinary punishments. In peace time the punishment of tying up is altogether abolished, and putting in irons reserved for certain exceptional cases. The punishment of bread and water is no longer inflicted on men in close arrest, but only as an increase of punishment on men undergoing solitary confinement, or in cells. Non-commissioned officers who voluntarily serve for longer than their three years can no longer be deprived either of their right to return to their quarters after retreat, nor of the permission to draw their messing money in lieu of rations. As regards punishments, cadets, who were hitherto on the same footing as sergeant-majors, will, in future, be on that of officers; their punishments will be notified privately and not in the daily orders. One year volunteers will, in future, undergo their punishments in places distinct from those of the rest of the men. Finally, it may be noted that officers undergoing simple arrest are permitted to partake of the midday meal with their comrades. Two other measures of detail should be mentioned, viz. : That one giving officers the right to ask for leave to be

spent in the place in which they are quartered, and that allowing Sundays as a day for absolute rest for the rank and file, with the exception only, when necessary, of indispensable guard and garrison duties.—*Revue Militaire*.

GERMANY.—*Recruiting Statistics for 1902*.—The number of youths reaching the age for military service amounted to 692,389. By adding those put back in 1901 (477,156) and in 1900 (343,276), and from the previous classes (92,920), the total recruiting resources amounted to 1,610,741 men. The classification was as follows:—

Unfit for service	...	...	...	...	41,245
Not available for service (convicts, etc.)	...	...	...	...	1,337
Failing to appear	...	...	...	...	129,728
Put back	...	...	...	...	574,425
Emigrants, available for military service abroad	...	...	...	...	413,924
Enrolled in Land Forces	{				209,201
	Combatant branches (a)...				
	Non-combatant branches (b)				4,413
Enrolled in the Navy	...	...	...	...	6,944
Assigned to Recruiting Reserve	{				81,381
	Army				
	Navy				1,384
Attached to 1st Levy of Landsturm	...	...	...	...	98,651
Fit but in excess	...	...	...	...	16,407
Enlisted as volunteers in the Army (c)	...	...	...	...	30,262
„	„	„	Navy	...	1,431

Total 1,610,741 men.

The number of young men who enlisted in the Army before attaining the age for military service amounted to 25,297. By adding this number to those mentioned under the figures (a), (b), and (c), it will be found that a total contingent of 269,773 men were enrolled during the year 1902.—*Bulletin de la Presse et de la Bibliographie Militaires*.

War Budget for 1904.—The official *Norddeutsche Allgemeine Zeitung* gives the following information with regard to the scheme for German War Budget for 1904.

The scheme for "Prussia and the States whose contingents are administered by the Prussian Minister for War" amounts, as regards the ordinary budget, to 451,180,814 marks, or an increase of 3,440,572 marks on that for 1903. This scheme does not necessitate any great changes. It suffices to notice the demand for credits, refused last year, for the purpose of increasing to 7,200 marks the pay of the 180 senior infantry lieutenant-colonels. The military authorities make the following demands, viz.: the formation of 765 new situations for re-engaged non-commissioned officers outside the Service, as clerks, draughtsmen, accountants, etc., so that it will be no longer necessary to detach men from their corps for these duties; the raising of certain lists of non-commissioned officers to the rank and pay of acting sergeant-majors; the number of re-engaged men in the machine-gun groups to be increased by one, and the number of regular soldiers by nine, in each group of six guns. The most serious increases, however, are with regard to clothing and equipment (an increase of 908,000 marks), lodging allowance (an increase of 1,174,000 marks), journey and transport expenditure (an increase of 909,000 marks), armament (an increase of 178,000 marks), and engineer service (an increase of 2,355,000 marks). The reduction is chiefly with regard to the subsistence, viz., about 3,000,000 marks in round numbers.

The extraordinary expenditure of the ordinary budget amounts to 28,393,838 marks, or a decrease on this year of 2,387,024 marks. The expenses of the extraordinary budget are 21,122,400 marks, showing an increase this year of 1,441,300 marks. The greater portion of this extraordinary budget, viz., 19,164,400 marks, is for the purposes of meeting the cost of fortifications, no details of which are given.

The scheme for the Budget of the "Saxon Contingent" amounts to 42,210,362 marks, showing no appreciable increase. The extraordinary expenditure of the ordinary budget is 3,233,969 marks, a decrease of 3,229,455 marks on 1903.

The scheme for the budget of the "Wurtemberg Contingent" amounts to 21,406,440 marks, an increase of 126,489 marks on that for 1903, and the extraordinary expenditure of the ordinary budget to 2,798,310 marks, an increase of 1,396,770 marks.

In these figures the scheme for the Bavarian Budget are not included; if, however, a total of the figures quoted is taken, it will give an approximate idea of the German expenditure for 1904. The total, then, of the ordinary budget amounts to 154,797,616 marks; the extraordinary expenditure of this budget to 34,426,107 marks; the extraordinary budget to 21,122,000 marks; making a general total of 570,346,123 marks, with a total increase over 1903 of 788,652 marks.

Infantry School of Musketry.—The objects of this school are numerous. This is what the most recent regulations relative to its working say on the subject. It should:—

1. Train instructors of musketry to be thoroughly conversant with the shooting capabilities of small arms; propagate throughout the army a knowledge of the principles relative to the employment of these arms, and regulations regarding ammunition and musketry.
2. Look out for omissions in the Musketry Regulations, and bring forward propositions to obviate them.
3. Study the regulations of foreign armies, and keep itself in touch with German and foreign military literature regarding musketry, and to extract from it anything that may be of use.
4. Study, under the orders of the War Minister, questions with reference to musketry and musketry duties.
5. Examine schemes for rifle ranges and the expenditure resulting from them.

This school, which is situated at Spandau-Ruhleben, can, in addition, dispose of the rifle ranges at Tegel, Döberitz, and Jüterbog, for the carrying out of musketry practice. Like other schools for the infantry, such as the Gymnastic School, the Non-commissioned Officers' School, the Preparatory School for Non-commissioned Officers, the Instructional Establishment for the Children of Military Men, the Infantry School of Musketry is placed under an inspector, with the rank of brigadier-general, under the direct orders of the War Minister. It consists of:—

1. A staff.
2. The detachment of officers.
3. The company cadre.

The officers' detachment is divided into groups of 30 officers each, captains and lieutenants being separate. A cadre captain is at the head of each group; he has under his orders several assistants and a number of non-commissioned officers, men and necessary fatigue men. The strength of the cadre company varies from 140 to 210 men with the necessary

non-commissioned officers; this *personnel* is detached from regiments to the school for one year.

At the school, between the months of February and November, a certain number of intelligence courses for generals and field officers and instruction courses for captains and lieutenants are carried out annually. As a rule, captains, and senior sub-lieutenants about to be promoted to the rank of lieutenant, and who have between four and six years' commissioned service, are sent to the school, but by no means all lieutenants and captains are passed. In addition to musketry, officers sent to the School of Musketry study all matters in connection with armament and ammunition, the repair of arms, and the laying down of rifle ranges. Lectures are given on the history of armaments, and on the weapons in use in foreign countries. In addition to the courses carried out at the School of Musketry for Officers, courses of instruction are held every year in several manœuvre camps for a certain number of non-commissioned officers. The latter receive practical instruction on the organisation of rifle ranges, of objectives, of field firing, more especially with regard to the measures to be taken for ensuring safety during the practices. They also go through a course of musketry instruction.

They are well satisfied in Germany with the results obtained by the Infantry School of Musketry. "There is no doubt, says the *Neue Militärische Blätter*, that our School of Musketry is a model establishment. It carries out its work with great ability, and ceaselessly endeavours to inculcate the soundest new ideas regarding field firing, and the method of preparing for it throughout the Army. Every officer who has been through a course at the School of Musketry brings away with him the impression that the school works admirably, and has taught him a good deal of useful information." The same article, however, declares, that the part played by the school is not a sufficiently ample one. All young sub-lieutenants, says the German writer, should go through a course at a musketry school during the year following their nomination; all lieutenants should return there every two years, and captains at least once if not twice, during their period of commanding a company, as is the case at the Field Artillery School of Gunnery. And further, as is also the case at the School of Gunnery, all infantry reserve officers should pass once through the School of Musketry. Although musketry instruction is carried out under favourable conditions by the troops, and is pushed in Germany as far as, if not further than, in any other Army, this does not suffice for the efficient battle preparation of infantry. As a matter of fact, field practices are carried out at short distances and on clearly visible objects. It would be far otherwise in war. Infantry fire in action would be delivered at medium ranges, that is to say, frequently at about 800 yards, and against not clearly defined objects, such as heads, shoulders, etc.

Practices of this nature are urgently required in the infantry, and can never be sufficiently carried out amongst troops. They, however, are not indispensable if instruction in musketry has been the means of making good marksmen, if fire discipline is ensured by good training, and, finally, if the individual battle instruction of marksmen has been well carried out. It then suffices to have good cadres, and the training of cadres is more easily achieved in schools than in regiments, for schools alone have at their disposal musketry ranges and sufficient *matériel*. It is impossible to pass everyone through the only school now existing. The author therefore proposes to enlarge it and to reserve it exclusively

for captains and field officers. He also proposes the formation of four or five district schools, at the rate of one to every four or five army corps, so that, as has been stated above, all lieutenants and sub-lieutenants might be made to pass through them. Each of these district schools, placed in a camp of instruction, would have for professors, officers prepared for that purpose at the Musketry School at Spandau. This would ensure uniformity of instruction, and a similar organisation to that of the above-mentioned school.

All non-commissioned officers, without exception, should, at least once, undergo a practical course of instruction. It should not be forgotten, in this regard, that all German non-commissioned officers being re-engaged men, this would necessitate the trouble of specially preparing them all for the duties of musketry instructors and assistants to musketry officers, because they must remain for many years with their regiments, after passing through the school. Finally, the author lays special stress on his idea of making every reserve officer go through a period of instruction at a school of musketry. "Who," says he, "will lead the sections and companies in the field? In many cases it will be the reserve officers who will have to take command when losses will have caused the elimination of the Regular officers. And these reserve officers will command precisely at a moment when the combative value of the company will be diminished by losses; when the company will have lost much of its efficiency by the drafting of reservists and newly enrolled recruits in its ranks. These officers might well be relieved from a large portion of parade instruction, and in exchange be drilled as thoroughly as possible in the control of firing in the field."—*La France Militaire*.

The German Army at the end of 1903.—The Quinquennial Law promulgated on the 25th March, 1899, will come to an end on the 30th March, 1904. The German authorities thus see themselves confronted with the necessity of either very shortly presenting a fresh scheme of military law to the newly-elected Reichstag, or else, as a certain proportion of the Press announces, of asking for the maintenance of the present situation for another year, thus transforming the Quinquennial, voted in 1899, into a Sextennial.

It may be of interest to recapitulate the situation of the German Army at a time when this question is about to be submitted to the Reichstag. This résumé is obtained from the *Einleitung und Standorte des deutschen Heeres*, of the 1st October, 1903, and only consists of figures, which, however, allow of a complete picture in a small space being presented. Before examining successively the various branches of the Service, it may be as well to say a word on the larger units.

Larger Units.—The German Army at present consists of 23 army corps, 17 of which are Prussian, 1 Würtemberg, 2 Saxon, and 3 Bavarian. The army corps has, as a rule, 2 divisions, with the exception of the 1st (Königsberg) and the XIVth (Karlsruhe) Army Corps, which have 3 each; finally the Guard possesses a cavalry division—the only one formed since the peace. Each division consists of 2 or 3 infantry brigades, 1 cavalry and 1 artillery brigade. The units not attached to divisions consist of a larger number of Jaeger battalions, regiments of foot artillery, and pioneer and transport battalions. These two latter are generally distributed at the rate of one to each army corps. The 23 German army corps are sub-divided into 48 divisions, plus 1 cavalry division, 106 infantry, 46 cavalry, and 46 field artillery brigades. the budgetary effectives amount to 24,358 officers (not including doctors

or military functionaries ranking as officers), 81,097 non-commissioned officers, 495,500 men (not including about 11,000 volunteers enlisted for one year), and 105,642 troop horses (not including 20,000 officers' chargers and about 6,500 for fatigue work, and one-year volunteers' horses).

Infantry.—The German infantry consists of:—

- a. 216 regiments, of which 175 consist of 3, and 41 of 2 battalions.
- b. 18 jaeger battalions. Altogether 625 battalions.
- c. 15 machine gun detachments.

This new unit *c* was introduced into the German Army in 1901; the detachments, attached either to infantry or jaeger battalions, are distributed very unequally throughout the different army corps. At the present time the 1st Army Corps has 3, three army corps have 2, and six have 1 each. The budgetary effective of the infantry is 12,521 officers, 45,707 non-commissioned officers, 334,302 men, and 810 troop horses, not including the units mentioned above.

Cavalry.—The German cavalry consists of:—

- a. 93 regiments of 5 squadrons, 14 of which are heavy cavalry, 25 uhlan, 28 dragoon, and 26 light cavalry regiments. Altogether 465 squadrons.
- b.—17 squadrons of mounted jaegers.

These squadrons *b*, raised successively since 1895, appear to have been at first intended, under the name of *Meldereiter*, to carry out a special rôle as orderlies and mounted escorts. Gradually the military authorities commenced to group them and to give them the same training as other cavalry squadrons. At the present time 5 of these squadrons form a so-called "combined" regiment, which is brigaded with an uhlan regiment; 6 others are linked in twos to form detachments under a major; the 6 last are attached to the regiments belonging to various army corps. The cavalry effective Budget is 2,440 officers, 9,688 non-commissioned officers, 57,255 men, and 65,937 troop horses, not including the *personnel* and horses mentioned above.

Field Artillery.—The Field Artillery, entirely reorganised by the law of the 25th March, 1899, consists of 95 regiments¹ of 2 or 3 brigade divisions each, which gives a total of 202 brigade divisions. The brigade divisions themselves are made up of 2 or 3 Field or Horse Artillery batteries. The number of batteries amounts altogether to 583, of which 541 are Field and 42 Horse Artillery. In the field batteries are included 66 field howitzer batteries. This gun, which has a calibre of 105 mm., was introduced into the German Army four years ago. Each army corps has a brigade division of 3 batteries, with the exception of the Bavarian brigade divisions, which have only 2. Amongst the 42 Horse Artillery batteries, 22 are linked in twos into 11 brigade divisions of 2 batteries, which are attached as a third brigade division to certain regiments. They provide the cavalry divisions, formed on mobilisation, with artillery. The budgetary effective of the Field Artillery is 3,062 officers, 11,909 non-commissioned officers, 53,301 men, and 33,624 troop horses, without including the *personnel* and horses mentioned at the commencement of this statement.

Foot Artillery.—The Foot Artillery consists of:—

- a. 18 regiments, 2 of which have 3, and sixteen 2 battalions.
- b. 1 instruction battalion at the Foot Artillery School of Gunnery, or altogether 39 battalions.

¹One of these is the Instructional Regiment of the Field Artillery School, and consists of 3 brigade divisions.

Battalions, as a rule, have 4 companies, some battalions, however, have 3, 5, or 6 companies. Altogether the number of companies in the Foot Artillery is 167.

c. 10 team groups.

These team groups have been raised successively by a budgetary vote since 1892, in order "to allow Foot Artillery to be employed in conjunction with the field troops," and are equipped and officered by the transport. They are attached to certain regiments at the rate of 1 per regiment. The distribution of the Foot Artillery amongst army corps is variable. The corps in the centre of the empire do not possess any, whilst those on the eastern or western frontier have each 1 or 2 regiments. A general idea of the distribution of these regiments may be formed from the fact that 8 of them are quartered in towns on the eastern and 10 in towns on the western bank of the Elbe. The budgetary effective of the Foot Artillery is 946 officers, 3,893 non-commissioned officers, 20,403 men, and 556 troop horses, taking into consideration the restrictions already mentioned.

Pioneers.—The Pioneer troops consist of 26 battalions, 25 of which have 4, and one, in Bavaria, 2 companies—altogether a total of 102 companies. There is also a Pioneer battalion per army corps, and a second battalion in the 1st (Königsberg), the XVth (Strasbourg), and the XVIth (Metz) Army Corps. In these army corps the two battalions are grouped under the command of one chief, with the rank of colonel. The budgetary effective of the Pioneers is 598 officers, 2404 non-commissioned officers, and 13,033 men.

Line of Communication Troops.—These troops at present consist of :—

- a. Railway : 3 Prussian regiments of 2 battalions ; 1 battalion in Bavaria.
- b. Telegraph : 3 Prussian battalions ; 1 Bavarian company.
- c. Balloonists : 1 Prussian battalion ; 1 Bavarian detachment.

Altogether about 11 battalions.

Each of the telegraph battalions has a team group provided by the transport, and which is attached to that branch of the Service. The balloon battalion has also a team group which is specially attached to it by a regulation of March, 1902. The budgetary effective of the line of communication troops is as follows :—

		Railway.	Telegraph.	Balloon.
Officers	... ..	185	50	17
Non-commissioned Officers	... ..	723	173	54
Men	... ..	3,778	1,353	343
Horses	... ..	—	—	58

Transport.—The transport battalions number 23 battalions—at the rate of 1 per army corps. They all have 3 companies, with the exception of one of the Bavarian battalions, which has only 2 companies. It has been seen above that in addition to their normal companies, certain battalions have had, since 1892, to form team groups for service either of the Foot Artillery, the Balloon Battalion, or the Telegraph Battalions : With the exception of the latter all these groups are attached to the troops for whose service they are meant. The budgetary effective of the transport is 332 officers, 1,814 non-commissioned officers, 6,491 men, and 4,657 troop horses.—*Revue Militaire.*

ITALY.—*The Eritrea Budget.*—The Italian possessions in Africa will impose on the State Budget, for the financial year 1903-4, an expenditure of 7,230,800 lire, less by about 400,000 lire to that of 1902-3. The amount

of the resources furnished by Eritrea itself, and which are devoted to the up-keep of the colony, must be added to the Government contribution. The receipts anticipated for the coming financial year amount to 2,369,200 lire, thus the total expenditure for Eritrea will amount to about 9,600,000 lire, to be distributed as follows :—

Ordinary Administrative Expenditure	...	2,595,000	lire.
Public Works Expenditure	... ..	1,553,000	„
Military Expenditure	... ..	4,737,000	„
Somaliland Protectorate Expenditure	... ..	715,000	„
Total	... ..	9,600,000	lire.

A study of the economic conditions of the colony proves that there is a decrease in the Customs receipts, the importation of grain having become less considerable, local resources sufficing for the requirements. On the other hand, the duties and taxes on cultivated land give larger and larger receipts. Duties on food-stuffs, monopolies, the post and telegraph offices, and the Customs revenue have greatly increased, and in consequence the contribution of the home country becomes less every year.

The receipts of the colony to the next Budget are, as has been already mentioned, 2,369,200 lire. They are distributed as follows :—

Customs and Maritime Duties	... ..	933,000	lire.
Taxes on Food-stuffs and Monopolies	... ..	48,000	„
Posts and Telegraphs	... ..	176,200	„
Duties	... ..	575,000	„
Customs Goods	... ..	400,000	„
Fluctuating Duties	... ..	120,000	„
Sundries	... ..	70,000	„

Total 2,369,200 lire.

The military expenses absorb 50 per cent. of the Budget expenditure. These it is hoped to diminish by an increase in the native Militia force, who are less costly than European troops. But before undertaking this change Italy waits until good relations are firmly established with Eritrea and the neighbouring tribes, and when all fears of any war or conflict have entirely disappeared.—*La France Militaire*.

KOREA.— *A Russian Description of the Korean Army*.—It may be regarded as characteristic of the political situation that the Russian daily Press is at the present time very greatly occupied with the internal political and military relations of the Eastern Asiatic States, and especially with those of Japan and Korea. Thus the *Russkii Invalid* has published during the last few weeks an article dealing extensively with the historical and military statistics of Korea.

The reorganisation of the Korean Army commenced in the early twenties of the preceding century, and was carried out in succession by Chinese, Japanese, American, and Russian instructors, the effects of whose varied lessons are still visible at the present day. The Regular Army in Korea has hitherto consisted entirely of infantry, which is made up in all of 6 brigades; cavalry and artillery are entirely lacking. At the head of the infantry is the Guards' Brigade in Seoul, which consists of 5 battalions of 5 companies each, and which has a total strength of 2,500 men. The 5 provincial brigades have only 3 battalions of 5 companies each. The total effective of the Army amounts, in round numbers, to 10,000 men. The Army is altogether made up by voluntary enlistment; the

monthly pay amounts to 6 yen (about 12 shillings); clothing, arms, and equipment are provided by the Government. The pay is, from a Korean point of view, high, so that many private soldiers are able to support their families on the balance of their pay. Enlistment into the Army is dependent on age and physical fitness. Nevertheless, men of proper age and development are only found in the Guards' Brigade; whilst almost mere boys are frequently taken in the provincial brigades.

The young officers receive their training in the school for noblemen at Seoul, where, however, practical exercises are almost entirely cultivated, military science being taught within only very narrow limits, and in a most elementary manner. The number of young noblemen who, according to their abilities, remain from 2 to 4 years at the school, amounts to 500. Every year 100 to 150 young officers enter the Army, and further promotion is according to seniority, merit, and favouritism. He who has small capacity and no influential relations must wait a long time for promotion. In spite of the poor material of the school at Seoul, according to European ideas, the young officers make, nevertheless, in expert opinion, a good impression on the whole. They present a most magnificent appearance in their beautiful uniforms, are active in their movements, and are attentive, amiable, and good-natured. With judicious training they might be made thoroughly reliable, zealous, and intelligent officers. A very different impression, it is true, is obtained from the Korean generals and senior officers.

The Army is supplied with obsolete European weapons, such as Berdan, Remington, and Gras rifles, the newest being Mausers and Murattas (from Japan). The musketry training is very indifferent. The weapons are handled without any care, and the cartridges are usually carried by the men in open cartridge belts over the shoulder. It is common in a battalion for one company to be armed with the Berdan and another with the Remington rifle. As has been mentioned before, there is no artillery and cavalry. There was once a scheme to raise 3 batteries of six guns each in Seoul, which would then have been armed with obsolete Japanese *matériel*. This scheme, however, fell through. Any attempt to raise cavalry would be attended with great trouble and expense; the Korean cannot ride, and there is an almost entire dearth of riding horses in the country.

In addition to the Regular troops, local troops can also be called out in Korea for defence of hearth and home. These are the so-called *Po-Shu*, a species of mediæval Militia. These are armed only with very cumbersome smooth-bore muskets, the ammunition for which is practically valueless, and will not carry for a greater distance than 75 paces, and that only after repeated efforts. There are no military institutions and depôts in Korea for the requirements of the troops on mobilisation, and in spite of her long coast-line, Korea possesses no Navy. In 1898 the War Minister was entrusted by an Imperial Decree with the creation of one. Up to date, however, no steps whatever have been taken in the matter.

On the whole, the Korean can be made into a good soldier. Even with the present slack state of discipline, insubordination seldom occurs. The officer lives in a similar manner to the soldier, and is very like him in every respect, so that he is able to exercise great influence over him. On account of their national characteristics, Korean troops could never deliver a resolute and energetic attack; but they would, even at the present time, be useful in defensive operations if their organisation and training were placed in competent hands. If they knew their own strength, and had confidence in their leaders, and in their weapons, their tenacity and

loyalty would make them dangerous opponents when on the defensive.—*Militär Wochenblatt.*

SERBIA.—*Changes in the Organisation of the Chief Command of the Army.*—The command of the Regular Army, instituted on the 6th January, 1898, and confided to King Milan, was endowed with very extensive powers, which were afterwards considerably curtailed by the decrees of the 18th August, 1900. Since that period a decree of the 2nd May, 1902, has restored its primary importance to this command by placing the duties of the General Staff under its supervision. The mechanism which that command has at its disposal is as follows:—

1. The Staff of the Commander of the Regular Army, the head of which is, at the same time, Chief of the Staff.

2. The Staff section, which consists of 3 offices, viz., those of interior economy, statistics, and mobilisation.

3. The Administrative section, which looks after the *personnel*, military jurisprudence, and the administrative and commissariat services.

4. The Inspectors of Arms (infantry, cavalry, artillery, engineers, and medical department).

This organisation has been further altered by two decrees, dated the 30th November, 1902, which order the abolition of the chief command of the Regular Army, the formation of a General Staff, and changes in the organisation of the War Department. The following are the new dispositions:—

The command of the Regular Army instituted on the 2nd May, 1902, has been abolished. A General Staff, with a distinct organisation, has been formed, whose rôle, powers, and composition, are clearly laid down. The historic and geographical sections of the War Department enter into the composition of the General Staff, and form corresponding sections in it. The Staff section of the command of the Army is transferred to the General Staff; that of inspectors of the Regular Army are transferred as regards Infantry and Artillery to corresponding inspectors of the War Department; as regards the Cavalry, to the Staff of the Cavalry division commander; as regards the Engineers, to the Staff of the officer commanding the Engineers; and as regards the medical department, to the medical section of the War Department.

At the War Department a post of Inspector of Infantry and one of Inspector of Artillery has been formed. These Inspectors report direct to the War Minister as regards their own branch of the Service. Their duty is to regulate and co-ordinate the training and manœuvres of their arm, and to make suggestions on the subject to the War Minister. They keep themselves in permanent touch with the Chief of the General Staff, and make the most important suggestions to him, as well as to the War Minister, with regard to training and manœuvres. The Inspectors review and inspect the troops and the schools of their branch of the Service, with regard to manœuvres and tactical training, when ordered to do so by the War Minister. They take note of the officers under their supervision, as well as of the school commanders of their branch of the Service. The Inspector of Artillery supervises, in addition, the commanders of the Fortress Artillery Regiment, of the Mountain Artillery Brigade, and of the Howitzer Regiment. In addition they both inspect, note, and report on the officers of their branch of the Service, make suggestions regarding those officers, and submit them to the War Minister. The Inspectors have the rank of Colonel or General. They are nominated by the King, and rank with commanders of division, and each has an assistant of field or lower rank.—*Revue Militaire.*

SWITZERLAND.—*Reorganisation of Field Artillery.*—As is known, at the same time that the Swiss Field Artillery will be provided with a new Q.F. 7.5-cm. gun, it will also have its 56 batteries of six guns each transformed into 72 batteries, consisting of four guns each. It is of interest to note the situation of the *personnel* and horses as regards this reorganisation. The following information on the subject is borrowed from the *Allgemeine Schweizerische Militär-Zeitschrift*.

The present *personnel* of officers suffices, at the cost of a few promotions, which will cause no inconvenience, to ensure the officering of the 72 new instead of the 56 old batteries, in spite of the necessity of having to create 16 new posts of captains-commandant; as a matter of fact, there is no dearth of qualified candidates for this rank, and the organisation of the School of Recruits will allow for a larger number of appointments of battery commanders to be made each year than is done at the present time. The *personnel* of non-commissioned officers is, in a general way, sufficient; the *personnel* of gunners will be so too, which is not surprising, for in spite of the increase in the number of units, the old 52 batteries of six guns made up a total of 312 guns, whilst the 72 new ones of four guns each represent in all 288 guns, that is to say, altogether 24 guns less. Under these conditions it would even be possible to allot nine gunners to each gun, which would suffice to fill vacancies occurring in the *personnel* either of the battery itself or of the ammunition wagons. The requirement of horses remains the same, in spite of the decrease in the number of guns, on account of the increase in the number of ammunition wagons. When all are in use there will be no horse reserve. At the same time, the annual contingent of drivers will have to be increased. The transition period until the new *matériel* is brought completely into use, and the new organisation is in thorough working order, will suffice to ensure the satisfactory recruiting of drivers. There was a question, in consequence of considerations regarding artillery training, of making the field artillery a body exclusively under the Federal authorities, and to transfer the administration of the 48 batteries, which are at present local troops, entirely from under the authority of the Cantons. To avoid increasing the difficulties during the transition period, this question has been provisionally left in suspense, and will be settled later.

NAVAL AND MILITARY CALENDAR.

DECEMBER, 1903.

-
- 2nd (W.) H.M.S. "Monmouth" commissioned at Devonport for Cruiser Squadron.
- 3rd (Th.) H.M.S. "Bonaventure" commissioned at Devonport for Pacific.
 " " H.M.S. "Furious" commissioned at Chatham for Mediterranean.
 " " 49th Co. R.G.A. arrived in England from Sierra Leone in the "Biafra."
- 4th (F.) H.M.S. "Pioneer" paid off at Chatham from Mediterranean.
 " " An additional list of South African War honours was published.
 " " 3rd Bn. Royal Fusiliers } Arrived at Bermuda from Egypt
 " " 95th Co. R.G.A. } and Malta in the "Dunera."
- 5th (Sat.) H.M.S. "Pioneer" recommissioned for Mediterranean and left for her station same day.
 " " H.M.S. "Euryalus" commissioned at Devonport for Australia.
 " " 4th Bn. Worcestershire Regiment left Bermuda for the West Indies in the "Dunera."

- 6th (S.) Announced that Abdullah Sheri had been captured by the Italians and that the Mullah had occupied Mudug, in Somaliland.
- 7th (M.) Reported that Colonel Mahon had suppressed the El Obeid rising and hanged the Mahdi.
- 9th (W.) H.M.S. "Berwick" commissioned at Portsmouth for service with Cruiser Squadron.
- " " New colours were presented to the 1st Bn. West India Regiment by the Governor of Jamaica.
- " " Advanced post of the Mullah's riflemen were turned out of Damot, Somaliland, by British Illaloes, the enemy losing heavily.
- 10th (Th.) H.M.S. "Repulse" arrived at Plymouth from Mediterranean.
- 12th (Sat.) Russia's reply to Japanese note was communicated and considered unsatisfactory.
- 16th (W.) H.M.S. "Furious" left Sheerness for Mediterranean.
- 17th (Th.) Launch of first-class battle-ship "Patrie" from La Seyne Yard, Toulon, for French Navy.
- 19th (Sat.) 4th Bn. Worcestershire Regiment arrived in the West Indies from Bermuda in the "Dunera."
- 21st (M.) 3rd Bn. Lancashire Fusiliers left the West Indies for South Africa in the "Dunera."
- " " Japan's reply to Russia was handed to the latter Power's representative.
- 22nd (T.) H.M.S. "King Alfred" commissioned at Portsmouth.
- 23rd (W.) 1st Brigade R.H.A. } Left England for South Africa in
16th Brigade R.F.A. } the "Assaye."
- 24th (Th.) Major-General Sir C. Egerton, K.C.B., reported the defeat of 2,000 dervishes near Badwein, Somaliland.
- 25th (F.) The British troops arrived at Phari, Thibet, which was found to be evacuated.
- 27th (S.) Announced that a general insurrection had broken out in Damaraland among the Bondelzwarts.
- 28th (M.) 83rd Co. R.G.A. left Esquimalt, via Vancouver, for Hong-Kong in the "Empress of India."
- " " The Japanese Government was given unlimited credit for war purposes.
- 30th (W.) A rising took place amongst the Akapoto tribe in Nigeria, the British resident being killed.

FOREIGN PERIODICALS.

NAVAL.

ARGENTINE REPUBLIC.—*Boletín del Centro Naval*. Buenos Aires: October, 1903.—"The Cruise of the 'Uruguay.'" "Proposed New Regulations for Promotion and Retirement." "Our Whale Fisheries: Enumeration and Classification of the Various Species." "Abbreviated Report on the Question of the Malvine Islands" (*concluded*). "International Regulation of Sea Fisheries." "Foreign Naval Notes."

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens*. No. 1. Pola: January, 1904.—"Columbus and the Discovery of Northmen in North America." "The Education of the Naval Officer." "The Tactical Value of Ships' Guns." "The Importance of Auxiliary Ships in Naval Warfare." "Rear-Admiral Börresen's Torpedo-Virator." "The French Naval Estimates for 1904." "Foreign Naval Notes."

BRAZIL.—*Revista Maritima Brasileira*. Rio de Janeiro: September and October, 1903. — "The Cruise of the 'Deodoro' and 'Floriano.'" "Torpedoes." "The General Instructions of the English Hydrographical Department" (continued). "A Comparative Study of Foreign Navies." "The Parsons' Turbine-Motor." "Foreign Naval Notes."

FRANCE.—*Revue Maritime*. Paris: October, 1903.—"The Control of the Administration of the Navy before Public Opinion and before Parliament." "The Spanish-American War in the Philippines, 21st April to 16th August, 1898" (continued). "On the Gun Armament of New Ships." "The Mercantile Marine."

November, 1903.—"The Spanish-American War in the Philippines, 21st April to 16th August, 1898" (continued). "The Blockade of Brest, 1803-1805" (continued). "Rear-Admiral Melville's Annual Report." "Measures of Security taken on Board the Emigrant Ships of the Hamburg-American Line."

La Marine Française. Paris: December, 1903.—"On the Somali Coast: The Franco-Ethiopian Railway." "M. Messimy's Report on the Naval Estimates." "A Contribution to the Study of the Engineer Question: The Decree of 28th November and Future Reforms." "Commercial Navigation: Introduction and History." "The Anglo-French *Rapprochement* and Naval Expenses."

Le Yacht. Paris: 5th December, 1903.—"The Discussion on the Naval Estimates in Parliament." "Yachting Notes." "The English First-Class Armoured Cruiser 'Hampshire.'" "The Spanish Navy." "The Mercantile Marine." 12th December.—"The Present Situation of the Officers of the Fleet." "Yachting Notes." "The Third-Class English Cruiser 'Amethyst.'" 19th December.—"The Trials of the U.S. Submarines of the 'Holland' Type." "Yachting Notes." "The New English Battle-ship 'Triumph.'" "The Mercantile Marine." 26th December.—"The Offensive Power of the Japanese Navy." "Yachting Notes." "The Naval Estimates in the Senate." "The Launch of the First-Class Battle-ship 'Patrie.'" "The Mercantile Marine."

Le Moniteur de la Flotte.—5th December, 1903.—"The Naval Estimates in Parliament." 12th December.—"An English Opinion on our Navy." "The Navy in Parliament." 19th December.—"The Specialisation of Types of Ships." "The Navy in Parliament." "Towards the South Pole." "Russia and Japan." 26th December.—"Protection Against Torpedoes." "The Armament, Trials, and Maintenance of Ships of the Fleet." "The Report of the Senate on the Naval Estimates." "Custom-House Rights and Ships of War." "Statistics of Ship-wrecks."

GERMANY.—*Marine Rundschau*. Berlin: January, 1904.—"On the Future of the U.S. Mercantile Marine." "Some Remarks on Armoured Cruisers." "The Development of the Russian Mercantile Marine at the Present Day" (concluded). "The Fifth General Meeting of the Technical Shipbuilding Society." "The Budget Proposals for the French Navy in the Chamber of Deputies." "The English Manœuvres in the Atlantic, August, 1903." "The Year's Report of the U.S. Navy, 1902-03." "Foreign Naval Notes."

ITALY.—*Rivista Marittima*. Rome: December, 1903.—"Notes on Naval Guns." "The Old Bolognese Water Communications" (continued). Letters to the Director:—"The Central Mediterranean." "On the Construction

of Moles." "On Automatically Closing Doors in Ships' Compartments." "Alternating or Continuous Currents." "The State Arsenals." "Foreign Naval Notes."

PORTUGAL.—*Revista Portuguesa, Colonial e Maritima*. Lisbon: November, 1903.—"A propos of Famines at the Cape de Verdes" (*continued*). "The Expedition to Quincunquilla" (*continued*). "On the Sugar-cane" (*continued*). "Naval Notes."

December, 1903.—"On the Influence of Thunderstorms on the Needles of Ships' Compasses." "On the Sugar-cane" (*concluded*). "The Expedition to Quincunquilla" (*continued*). "The Colonial Movement." "Foreign Naval Notes."

SPAIN.—*Revista General de Marina*. Madrid: December, 1903.—"The 'Carpathia.'" "On the Geodetical Surveys in Peru by Don Jorge and Don Antonio de Ulva, 1735-1746." "Lectures at the Naval and Military Central Club, 1903-1904: 'Modern Navies.'" "Naval and Military Official Nomenclature." "Wireless Telegraphy." "Foreign Naval Notes."

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AUSTRIA-HUNGARY.—*Danzer's Armee-Zeitung*. Vienna: 3rd December, 1903.—"Austria-Hungary and the Balkans." "Military Surgeons and Military Pensions." "Military and Social Questions of the Day." "Self-help against Indebtedness." 10th December.—"The Yellow Danger." "Small Garrisons." "Regensburg, 1809." "Football in the Army." "The Success of the Officers' and Military Pensioners' Society and its End." 17th December.—"Our Imperial War Minister." "Austria-Hungary's Balkan Anxieties." "The Infantry Subaltern." "Regensburg, 1809" (*concluded*). "Protection of the Army Against Insults." 24th December.—"Austria-Hungary or Austria and Hungary?" "The War Budget for 1904." "Wrede's History of the Army." 31st December.—"Political Review of the Turn of the Year." "Success in Battle: by what means can it be best assured?"

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Mittheilungen über Gegenstände des Artillerie und Genie-Wesens. Vienna: December, 1903.—"Determination of the Velocity of a Projectile by Means of Non-recurring Condensed Discharges."

Militär-Zeitung.—Vienna: December, 1903.—Has not been received.

BELGIUM.—*Bulletin de la Presse et de la Bibliographie Militaires*. Brussels: 15th December, 1903.—"Physical Education in Sweden" (*continued*). "Machine Guns" (*continued*). "Report of the Royal Commission of Enquiry into the Military Preparations for and other Questions regarding the South African War" (*continued*). "Organisation of the German Army" (*continued*). 31st December.—"Physical Education in Sweden" (*concluded*). "Organisation of the German Army" (*concluded*).

FRANCE.—*Revue du Cercle Militaire*. Paris: 5th December, 1903.—"The Indian Empire and her Army" (1 map). "Swiss Army—the Grand Manœuvres of 1903." "The Battle of Novi." 12th December.—"Swiss Army—the Grand Manœuvres of 1903" (1 map, *continued*). "The Indian Empire and her Army" (1 map, *continued*). "The Battle of Novi" (*concluded*). "A Recent Fight in Manchuria between Russians and Tongueses."

19th December.—"The Indian Empire and her Army" (1 map, *continued*). "Swiss Army—the Grand Manœuvres of 1903" (1 map, *concluded*). "New Books." 26th December.—"The Indian Empire and her Army" (1 map, *continued*). "The German Army in the Reichstag."

Le Spectateur Militaire. Paris: 1st December, 1903.—"The Russo-Turkish Campaign of 1877-78." "Tactical Study of the South African War, 1899-1900" (1 map, *continued*). "Moral Education and the Provisional Infantry Drill Regulation" (*concluded*). "Political History of Annam and of Tonkin" (2 sketches, *continued*). 15th December.—"The Russo-Turkish Campaign of 1877-78" (*continued*). "Tactical Study of the South African War, 1899-1900" (*continued*). "Political History of Annam and of Tonkin" (*continued*).

Revue Militaire. Paris: December, 1903.—"The German Army at the end of 1903." "The New Russian Cavalry and Artillery Remount Method." "The German Imperial Manœuvres of 1903." "Studies of the South African War, 1899-1900" (*continued*).

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Revue du Génie Militaire. Paris: December, 1903.—"The Madagascar Railway" (*concluded*). "Topographical Works of the Military Engineers in France in the 19th Century" (*continued*). "Small War Balloons." "The Mercadier Multiplex Telegraphy."

Revue de Cavalerie. Paris: December, 1903.—"Cavalry of the Future." "Origin of the French Cavalry" (*continued*). "Cavalry Machine-guns" (6 plates, *continued*). "Paris-Rouen-Deauville." "The New Doctrine in the French Cavalry."

GERMANY.—*Militär-Wochenblatt*. Berlin: 1st December, 1903.—"Law Regarding Marine Cables in War-time." "Battle Problems at Infantry Inspections" (*concluded*). "A Few Aspirations Regarding the Field Artillery Regulation." 3rd December.—"On the Unrest Amongst the Bondelzwarts' District." "Law Regarding Marine Cables in War-time" (*continued*). "On the New Military Transport Regulation in Russia." 5th December.—"On the Unrest amongst the Bondelzwarts" (*concluded*). "Law Regarding Marine Cables in War-time" (*concluded*). 8th December.—"The New Doctrine in the French Cavalry." "Infantry Long-distance firing in the South African War." "The Korean Army from a Russian Point of View." 10th December.—"The Characteristics of the French Army under Napoleon I." (*continued*). "Consumption and Dysentery in Horses." "A Few Remarks on the Article: 'The Development of Aiming Implements of Field Artillery.'" "Leave in the French Army." 12th December.—"A Visit to the Swiss Infantry School of Musketry." "A Methodical Training of the Eye." "The Value of Instruction in the Service for the Intellectual and Moral Education of the Soldier." 15th December.—"A French Plan of Defence." "Intelligence from the Russian Army." 17th December.—"The Battle of Wörth." "The Technical Drill Problem of Field Artillery Development." "The New Helmet in the French Army." "An Experi-

ment of the Power of a Gun Recoiling on its Carriage." 19th December.—"The 100th Anniversary of the English-German Legion." "The Battle of Wörth" (concluded). "Intelligence from the Belgian Army." 22nd December.—"The War Letters of General von Kretschman and the Hessian Troops." "Once more 'Life Hussars.'" 24th December.—"Development of Strategic Knowledge in the 19th Century." "Participation of the Army in Racing in France." "The Construction of Horse Stalls for Chargers." 29th December.—"Preliminaries to Battle." "Intelligence of the Austro-Hungarian Forces." 31st December.—"The Conclusion of the Year." "Collision in Action."

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Rivista Militare Italiana. Rome : December, 1903.—"The Cost of Military Service." "The New Regulations for the Commissariat Service in War." "The Other Arms in Advance-Scouting." "Experiment in the Historical-Geographical Education of Italian Recruits."

PORTUGAL.—*Revista de Engenharia Militar.* Lisbon : September, 1903.—"Some Notes on Barracks" (continued). "The Works Completed for the Defence of Lisbon." "Two Words about Town Drainage." "The Late General Brialmont."

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RUSSIA.—*Voïénniy Sbórník.* St. Petersburg : December, 1903.—Has not been received.

SPAIN.—*Memorial de Ingenieros del Ejército.* Madrid : November, 1903.—"Sea Wall against the Encroachments of the Sea at the Old Cemetery Battery, Barcelona." "Armoured Cement : Formula for Calculating the Proportions." "On the Use of Petroleum as a Combustible on Railways."

Revista Técnica de Infanteria y Caballeria. Madrid : 1st December, 1903.—"Military Science at Athens : Lecture—Fortifications since the Introduction of Powder and Steel Metallurgy." "A Study of the Spanish

Mausser Rifle, 1893 Model" (*continued*). "The Proper Duties of Cavalry." "On the Organisation and Service of Cavalry in the Field." "Diplomatic and Military."

SWITZERLAND.—*Revue Militaire Suisse*. Lausanne : December, 1903.—"The German Imperial Manœuvres of 1903." "Military Sport." "Echoes from the 1st Army Corps Manœuvres."

UNITED STATES.—*The United Service*. New York : December, 1903.—"An Indian Princess." "The Duel." "The Trials of a Staff Officer." "From Generation to Generation." "Our Contemporaries." "Service Salad." "Colonel William C. Church."

Journal of the United States Artillery.—Fort Monroe, November-December, 1903.—"Test of Experimental Fire-Control Installation at Pensacola, Fla." "Formulas for Velocity and Pressure in the Bore of a Gun, and their Verification by Recent Experiments." "The New Field Artillery." "The Panoramic Telescopic Sight." "The Carrousel of 1903, and the School of Application for Artillery and Engineers at Fontainebleau." "A Lecture to Cadets on the Use of Reference Books." "New Forms of Armoured Forts." "Professional Notes."

NOTICES OF BOOKS.

The Campaign in Bulgaria, 1877-1878. By F. V. GREENE, Corps of Engineers, U.S. Army. Formerly Military Attaché to the United States Legation, St. Petersburg. London : Hugh Rees, Limited, 124, Pall Mall, 1903. Price 8s. 6d.

"The Russian Army and its Campaigns in Turkey in 1877-78," by Lieutenant F. V. Greene, of the U.S. Corps of Engineers, has long been recognised as the standard work in the English language on the last Russo-Turkish war. Lieutenant Greene served as Military Attaché with the Russian Army during the whole of the Bulgarian campaign; he was present at the battles of the Shipka, at Plevna, crossed the Balkans with General Gourko's column, and was present at the subsequent battles round Philippopolis, and accompanied General Skobelev in the final advance on Constantinople. On his return to St. Petersburg, he was employed for a year in collecting and digesting the official reports of the war, and the book which he subsequently published was practically a reprint of his official report to the U.S. Government. Unfortunately this valuable work has been out of print now for some time, and even second-hand copies of it are extremely difficult to obtain. Students of military history, therefore, who are not fortunate enough to possess the original book, will welcome this reprint of the Bulgarian Campaign, which Messrs. Rees have recently published. The only criticism we can make is, that it seems a pity that more of the maps to be found in the original have not been reproduced in this new edition; for instance, such important maps as the ones showing the position of the troops round Plevna on November 5th, 1877, the passage of the Balkans near Sophia, December 25th-31st, 1877, and the battles near Philippopolis, January 15th, 16th, and 17th, 1878, ought certainly to have been included, while there is a distinct want of a good general map. Having said so much, however, we can heartily congratulate the publishers on having brought out a very useful addition to the Pall Mall Military Series which is sure to prove extremely useful, particularly to officers who are studying for the Staff College and promotion examinations; and we may add that the book

is a very convenient size, and the type excellent, while the reproduction of the special maps selected for issue with the book is satisfactory.

The Life of a Regiment: The History of the Gordon Highlanders. By Lieut.-Colonel C. GREENHILL-GARDYNE. Vol. II. Edinburgh: David Douglas, Castle Street, 1903.

The first volume of Colonel Gardyne's book was received with a well-merited and unusual amount of praise. It was undoubtedly a well-written and fascinating account of portion of the services of a very distinguished regiment, the continuation of which was awaited with some anxiety. The volume now under review treats of the services of the old 75th Foot from 1787 to 1881, of those of the 92nd from 1816 to 1881, and of both battalions from that date—the introduction of the territorial system—to 1898. The period embraces the Indian wars of a hundred years ago, besides the Indian Mutiny, the Kaffir, Afghan, Egyptian, Chitral, and Tirah campaigns; and the services of the two battalions are related in the charming readable style which secured for the first volume such a favourable reception. Those who peruse Colonel Gardyne's book will close its pages with a feeling of regret that the martial spirit which formerly characterised the inhabitants of the Highlands of Scotland, and gave the Army such regiments as the Gordon Highlanders, shows signs of deterioration under the social and economic changes which have taken place and under the narrow-minded bigotry of a certain section of the Scottish ministry.

PRINCIPAL ADDITIONS TO LIBRARY DURING DECEMBER, 1903.

General Report on the Operations of the Survey of India, administered under the Government of India during 1901-1902. Prepared under the Direction of Colonel St. G. C. GORE, C.S.I., R.E., Surveyor-General of India. Feap fol. (Presented.) (Government Printing Office, India.) Calcutta, 1903.

The Story of General Bacon. By A. J. BOGER. Crown 8vo. (Methuen and Co.) London, 1903.

The British Empire, or Rule Britannia. By W. A. HOLME-TWENTYMAN. 8vo. (Presented.) (Robert Banks and Son.) London, 1903.

The Campaign in Bulgaria, 1877-1878. By F. V. GREENE. 8vo. (Presented.) (Hugh Rees, Ltd.) London, 1903.

Some Lessons from the Boer War. By Colonel T. D. PILCHER. 8vo. 2s. 6d. (Presented.) (Isbister and Co., Ltd.) London, 1903.

Manual of Field Sketching and Reconnaissance. Crown 8vo. 1s. 6d. (Harrison and Sons.) London, 1903.

Nelson and the Neapolitan Jacobins. Navy Records Society. Edited by H. C. GUTTERIDGE. 8vo. London, 1903.

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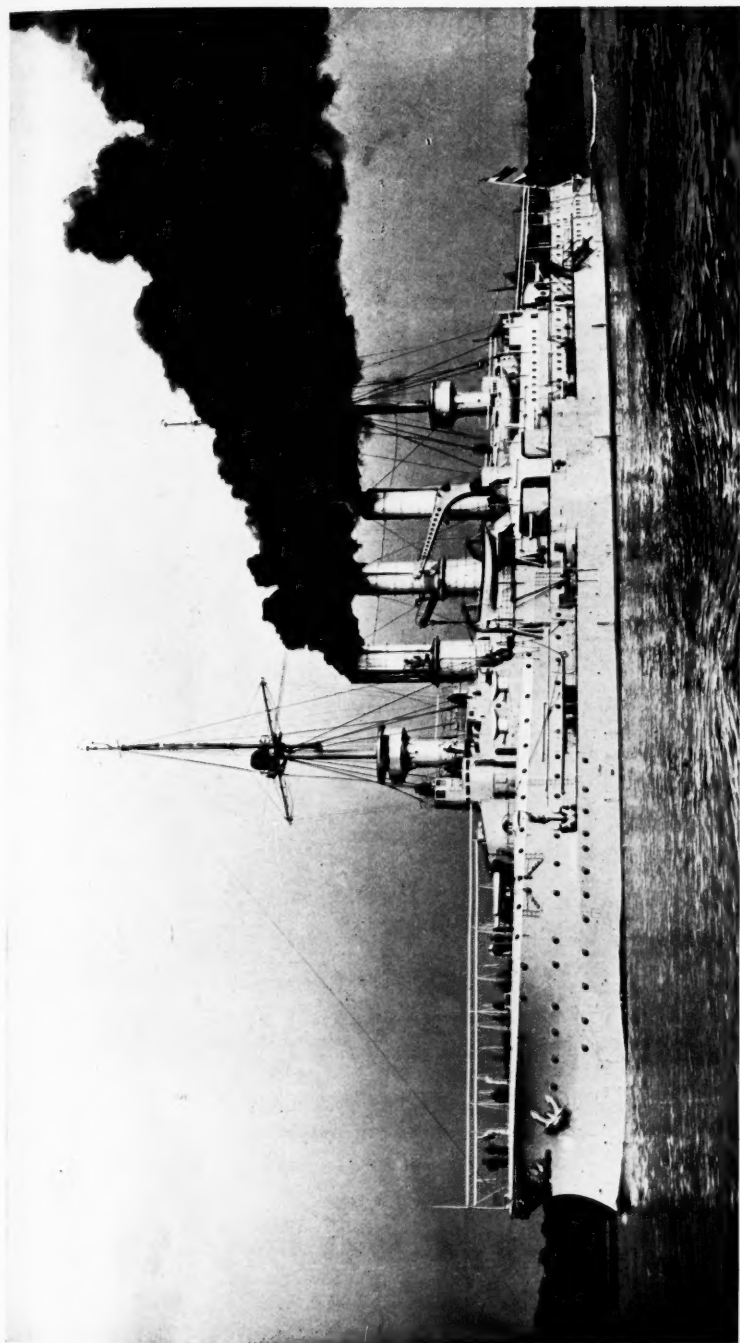
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